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ABSTRACT

This instructional workbook contains 24 units to be used by beginning students in allied health care occupations courses. The units are organized in four sections that cover the following topics: introduction to allied health careers, health/wellness, basic sciences, and basic anatomy and physiology. Each unit contains a unit objective, specific objectives, information sheets, and assignment sheets. Assignment sheets are designed to be filled in by students as they study the units. (KC)

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Allied Health Careers
Instructional Workbook

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ALLIED HEALTH CAREERS

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ORIENTATION TO ALLIED HEALTH CAREERS
UNIT I

UNIT OBJECTIVE

After completing this unit, the student should be able to research an occupation of the student's choice. The student will show this knowledge by exploring a chosen health career and by completing the unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match to their correct definitions terms associated with orientation to allied health careers.
2. Name and explain personal characteristics needed by a person working in a health career.
3. Select from a list general advantages of being involved in an allied health career.
4. List major areas of emphasis in health careers.
5. Match health care facilities and agencies to their correct types of services.
6. Name the overall goals of the U.S. Public Health Department.
7. State guidelines for ethical behavior.
8. Match terms associated with legal considerations of health care to their correct definitions.
9. State guidelines for avoiding legal implications.
10. List major trends affecting changes in current health care.
11. Explore a chosen health career.

ORIENTATION TO ALLIED HEALTH CAREERS
UNIT I

INFORMATION SHEET

I. Terms and definitions

   A. **Career** — General course or progression of one's work; the sum of one's occupations

   B. **Occupation** — Job that serves as one's regular source of livelihood; a step in an individual's career

   C. **Self-awareness** — Ability to recognize one's own values, ambitions, and goals

   D. **Personality** — A person's total reaction to the environment; a person's distinctive individual qualities

   E. **Health** — State of complete physical, mental, and social well-being; not merely the absence of disease or infirmity

   (NOTE: This definition comes from the World Health Organization, a group concerned with worldwide health problems and their prevention.)

   F. **Prejudice** — Preconceived judgment or opinion

   G. **Unbiased** — Free from all prejudice

   H. **Ethics** — Principles of conduct

   I. **Ethical** — Conforming to an accepted professional conduct

   J. **Empathy** — Recognition and acknowledgment of another person's feelings

   EXAMPLE: Put yourself into another person's shoes (figuratively) to understand how that person feels.

   K. **Palliative care** — Therapy designed to relieve or reduce intensity of uncomfortable symptoms, but not to produce a cure

   L. **Chronic** — Developing slowly and persisting for a long period of time

II. Major personal characteristics needed by a person working in a health career

(NOTE: People in the health field need several specific personal characteristics. Because most health careers center around providing care for others, the person who pursues one of these careers must be able to relate well to others, whether they be patients in the hospital or owners of sick animals.)

   A. **Honesty**

   Honesty is part of the ethical behavior that the health worker must exhibit, for this person is challenged each day with tasks to be performed that relate directly to the care of the client.

INFORMATION SHEET

B. **Interest in working with people**

All of the health careers require constant contact with other people, both clients and fellow workers. You must be able to work with all types of people.

C. **Patience**

Many times the health care worker will be under stress and pressure when dealing with clients. Families and friends of clients, as well as those who are ill and concerned about the nature of their illnesses, may exhibit uncharacteristic behavior. The health care worker will need an understanding and tolerant attitude toward those persons and their behavior.

D. **Sincerity**

To every client, the health care worker must display a warm, caring, sincere approach without bias or falseness. The client can easily detect insincerity; without sincerity, a therapeutic relationship between client and health care worker will not develop.

E. **Ability to communicate well**

Good skills are needed when communicating with co-workers personally and over the telephone. Written communication used in documentation of client care must be clear, concise, and accurate, as it has legal implications if the material is ever presented in court.

F. **Flexibility**

Health is a dynamic, ever-changing field with research constantly showing new types of care and techniques. For this reason the health care worker must be willing to adapt when new information is discovered.

G. **Responsibility**

Each task gives the health care worker a great deal of responsibility. Being responsible and following directions are another part of ethical behavior exhibited by the health care worker.

H. **Empathy**

A health care worker needs to be able to understand the emotions of others in order to help them. These feelings must be a true reflection of concern or the rapport will be lost.

I. **Tact**

A health care worker needs to be diplomatic. Many times we can hurt or offend someone just by speaking before we think.

INFORMATION SHEET

III. General advantages of being involved in an allied health occupation

   A. Variety of work

   (NOTE: The role of the allied health personnel expands daily as new equipment, techniques, and methods of care are developed to prevent, treat, or eliminate disease.)

   B. Professional pride

   (NOTE: There is a certain prestige and pride in being a health professional. Many people look to the health care worker as a source of information related to health care, so you have an opportunity to teach good health practices and be a role model for health.)

   C. Availability of work and geographic mobility

   (NOTE: The health professional is usually able to relocate in a variety of health care facilities and locations. Professional journals and periodicals may advertise positions available in other areas.)

   D. Opportunity for advancement

   (NOTE: In almost all of the health professions, there is the possibility of upward mobility. A career reaching higher levels can be attained by using the education and experience already learned as a basis.)

   E. Stable salary and benefits

   (NOTE: Wages earned as a health service worker are stable. Benefits vary from one facility to another, but may include health insurance, professional discount on health care, vacation and sick leave, and retirement and savings plans. Some facilities even offer tuition reimbursement for higher or further education.)

   F. Excellent work environment

   (NOTE: Health facilities are very clean and have a pleasant atmosphere. Coworkers function as an efficient team to provide the best health care possible.)

IV. Major areas of emphasis in health careers

(NOTE: This section only covers the major areas of emphasis, and is only a brief introduction. Further information regarding the specific occupations can be found in sources identified by your instructor.)

   A. Clinical laboratory service

   (NOTE: Some illnesses cause changes in the body fluids and tissues. To detect these, highly technical tests are performed in the laboratory. These tests are performed by clinical laboratory personnel.)

INFORMATION SHEET

B. Dentistry

(NOTE: This health career deals with treating and preventing problems with the hard and soft tissues of the mouth.)

C. Dietetics and nutrition

(NOTE: Dietetics is the science of food and nutrition. Nutrition is the science of food and its effect on the body.)

D. Education

(NOTE: As well as formal educational programs, this area can also include teaching safety in an industrial setting or public education on healthful living.)

E. Health services administration

(NOTE: This area deals with developing and delivering health care systems to provide quality medical care.)

F. Medicine

(NOTE: Medicine deals with the prevention of disease as well as with healing.)

G. Nursing

(NOTE: The nurse cares for the sick, aids in the prevention of illness, and is involved with the promotion of health.)

H. Pharmacy

(NOTE: The pharmacist prepares and dispenses medication as ordered by the doctor, and is also involved in public education regarding the safe use of drugs.)

I. Mental health, mental illness

(NOTE: This deals with all aspects of human behavior as well as care for the mentally ill.)

J. Technical instrumentation

(NOTE: Workers are trained to monitor and operate the highly sophisticated equipment used in a health care facility.)

K. Therapy

(NOTE: A therapist helps individuals with physical, mental, or social handicaps to regain or maintain independence.)

L. Veterinary medicine

(NOTE: This area deals with the care of animals and prevention of disease.)

INFORMATION SHEET

M. Vision care

(NOTE: Care of the eyes involves maintaining or improving vision, and treating diseases of the eyes.)

V. Types of services available through health care facilities and agencies

A. General hospitals

(NOTE: General hospitals may be privately or publicly owned. The Veteran's Administration hospitals, for instance, are federally supported and provide a full range of care for people who have served in the armed forces.)

1. Short-term hospitalization
2. Emergency care
3. Diagnostic services
4. Medical and surgical services

B. Specialty hospitals

EXAMPLES: Orthopedic or cancer hospitals, trauma centers, psychiatric hospitals

1. Long-term hospitalization
2. Care for specific diseases

   (NOTE: The diseases are usually chronic, and may include tuberculosis or psychiatric problems.)

C. Teaching medical centers

1. Medical services of general hospitals
2. Training for health workers
3. Medical research

D. Convalescent homes

1. Long-term care for the elderly
2. Extended-recovery care for the physically ill

E. Clinics

1. Services of one or more physicians, frequently representing different areas of specialization

INFORMATION SHEET

2. Immediate care for minor injuries and illnesses

   (NOTE: Surgi-centers specialize in the care and treatment of minor injuries and illnesses. These centers are usually open twenty-four hours a day and operate on a first-come, first-served basis. Many clinics, however, do schedule appointments.)

3. One-day surgery

F. Senior day-care centers

(NOTE: Senior day-care centers are for the elderly who live at home but may need care when the family is away during the day.)

1. Basic medical services

2. Social services for the elderly

   EXAMPLES: Companionship, midday meal, entertainment

G. Hospices

(NOTE: European-style hospices usually have suites or individual cottages where families, including pets, may remain with the terminally ill patient until the patient's death. Many hospices in this country, however, provide services in the patient's own home.)

1. Palliative care for terminally ill patients

   (NOTE: When treatment is no longer effective for a terminally ill patient, a hospice attempts to ease pain without treating the disease further.)

2. Supportive care for families of terminally ill patients

H. Rehabilitation centers

1. Therapy for patients who have had a debilitating illness or a loss of limb or organ function

2. Prosthetic fitting and instruction in activities of daily living

   (NOTE: A *prosthesis* is an artificial part of the body.)

I. Health maintenance organizations (HMO)

(NOTE: Clients pay a predetermined fee, and the HMO agrees to care for all the health needs of the clients without further fees.)

1. Preventive health care

2. Basic health services

   EXAMPLES: Hospitalization, immunizations, checkups

INFORMATION SHEET

J. Preferred provider organizations (PPO)

(NOTE: Clients pay an agreed-upon, usually discounted price, paid on a fee-for-service basis.)

1. Medical care
2. Dental care
3. Podiatry care
4. Mental health services

K. Home health care agencies

(NOTE: These agencies provide care for all ages.)

1. Community health care

   EXAMPLES: Nursing care, physical therapy, speech therapy, personal care

2. Housekeeping services

   EXAMPLES: Housecleaning, shopping, meal preparation

L. Volunteer agencies

(NOTE: Services may vary greatly, depending on the individual agency. Not supported financially by the government, these agencies receive support from donations, membership fees, fund raisers, and endowments. Many of the people who work for these agencies are not paid.)

EXAMPLES: American Cancer Society, American Diabetes Association, American Heart Association, American Red Cross, March of Dimes

1. Research
2. Public education
3. Individual assistance

   EXAMPLES: Physical therapy, hospice care

M. U.S. Public Health Department

(NOTE: The Public Health Department operates at national, state, and local levels.)

1. Public education
2. Water and food purity checks
3. Alcohol and drug abuse control

INFORMATION SHEET

4. Control and reporting of communicable diseases

5. Maternal and child health services

6. Public health nursing

7. Licensing various health agencies

VI. Overall goals of the U.S. Public Health Department

A. Perform research in diseases that kill, handicap, or cripple

B. Prevent and treat alcohol and drug abuse

C. Prevent and control diseases that are transmitted by insects, animals, air, water, and people

D. Maintain standards for food and drug purity

E. Plan more effective ways to deliver health services

F. Help make quality care more available and affordable by encouraging health personnel to work in underserved areas

VII. Guidelines for ethical behavior

(NOTE: Ethics give guidelines for acceptable behavior. Every profession has a code of ethics that governs the conduct of its members.)

A. Be loyal to employer, co-workers, and clients

(NOTE: Always show a positive attitude toward your place of employment.)

B. Perform only those procedures or treatments that you are qualified to perform

C. Be sincere, honest, and trustworthy in the performance of your tasks

D. Practice sound health habits

(NOTE: Good personal health is necessary for you to carry out your duties. In addition, you will be a good role model by practicing sound health habits.)

E. Give the same level of care to all clients regardless of race, creed, color, national origin, or handicap

F. Respect the privacy of others

(NOTE: ALL INFORMATION IS TREATED AS CONFIDENTIAL. Federal law protects privacy of patients or clients. Client information should never be discussed with anyone not directly involved in the care of the client. Never discuss client information with family, friends, or even other allied health students. If any information has to be discussed, DO NOT talk where your conversation can be overheard; go somewhere private.)

INFORMATION SHEET

G. Carry out your assigned tasks

H. Refuse to accept money or expensive gifts from clients

(NOTE: You are being paid to perform those duties, and the clients are being billed for the services provided.)

I. Take proper care of equipment and supplies

(NOTE: Equipment and supplies are very expensive to repair or replace.)

J. Know the policies of the health care facility, and follow them exactly

K. Treat all clients with compassion, kindness, and respect

VIII. Terms associated with legal considerations of health care

(NOTE: Occupations dealing with personal care have many legal considerations. For one's own protection as well as that of the client, the health care worker should assess the legalities carefully.)

A. **Assault** — Threat or an attempt to injure another person in an illegal manner

B. **Battery** — Unlawful touching of another person without that person's consent

(NOTE: A charge of assault and battery can be filed if the client did not give consent for the treatment given.)

C. **Informed consent** — Permission voluntarily granted by a person of sound mind who has been informed of a particular procedure or treatment and all its risks and possible complications

D. **False imprisonment** — Holding or retaining a person against that person's will

(NOTE: False imprisonment is the charge made when a hospital keeps clients against their wills or uses restraints improperly.)

E. **Malpractice** — Professional care that is faulty, injurious, negligent, or improper practice

F. **Negligence** — Failure to perform in a reasonably prudent manner

EXAMPLE: A health care worker fails to check on a patient receiving treatment with a heating pad. Any burn that patient receives from the heating pad would be the result of negligence.

G. **Reasonable care** — Services performed for a client that meet the common standards expected in the community for a comparable worker

INFORMATION SHEET

H. **Defamation** — Disparaging, unjust statements that endanger a reputation and can be considered a legal cause for lawsuit if heard or read by a third person

EXAMPLES: *Slander* is spoken defamation.
Libel is either written or spoken defamation.

(NOTE: Before saying anything, evaluate how it sounds before speaking it. If in doubt, say nothing.)

I. **Invasion of privacy** — Giving out facts that could harm a client in any respect, or failure to knock before entering a room

J. **Privileged communication** — Personal or private information given by a client to medical personnel

K. **Will** — Legal document that defines the disposition of a person's property and takes effect after that person's death

L. **Living will** — Document stating that the signer does not want life-sustaining measures taken in the event of an incurable, irreversible condition caused by injury or illness

(NOTE: This document has to be signed while the person is mentally able to make this decision, and it is not always held up in a court of law.)

IX. Guidelines for avoiding legal implications

A. Never perform a procedure or treatment that is not approved by your instructor

(NOTE: Occasionally your supervisor at the work site may ask you to do something you are not qualified to do. If so, explain very tactfully that you will have to check with your instructor.)

B. Always have a doctor's order before applying protective devices

C. Remember that anything written on a client's record is considered a legal document

(NOTE: If ever taken to court, the records need to be clear, concise, and complete. As far as the law is concerned, if it was not charted, it was not done.)

D. Protect the client's rights

E. Do not threaten anyone under your care

(NOTE: A threat can be as simple as mentioning an IV if the person does not eat.)

F. Refer all requests for information about a client to the supervisor

(NOTE: It is essential to protect your client's privacy, and never release confidential information.)

INFORMATION SHEET

X. Major trends affecting changes in current health care

  A. Home health care

  (NOTE: More ill people are being cared for at home, and more skilled care is needed.)

  B. Wellness programs

  (NOTE: Wellness programs place an emphasis on preventive health care. Many employers and communities have started wellness programs for their staff members and citizens.)

  C. Entrepreneurship

  (NOTE: Many individuals with different backgrounds, such as nurses and dietitians, are opening their own businesses to counsel people in health care. This counseling is a fairly new area and is expanding daily.)

  D. Advancing technology

  (NOTE: With more sophisticated equipment being used, health care providers need more technical skills.)

  E. Cross-trained or multiskilled personnel

  F. Group homes

ORIENTATION TO ALLIED HEALTH CAREERS
UNIT I

ASSIGNMENT SHEET #1 — EXPLORE A CHOSEN HEALTH CAREER

NAME ______________________________ SCORE ______________

What questions should you ask about an occupation or occupational group in which you may be interested? Before you start to study and investigate an occupation, you should have an outline of the subjects you wish to explore. A topical outline helps to make a study flow naturally from one topic to another.

EXAMPLE:
Definition of the occupation and nature of the work
Number and distribution of workers
Qualifications and training
Methods of entering
Career advancement
Employment outlook
Earnings
Working conditions
Social and psychological factors

Use the form on the following pages to report your investigation of an occupation. Major sources of occupational information include counselors; libraries (school and public); films, filmstrips, tapes, and slides; professional, trade, and business associations; labor unions; people working in the field; employers; government agencies; and chambers of commerce.

Definition and Nature of Occupation

A. Define the occupation and name the types of duties performed in it.

____

____

____

____

ASSIGNMENT SHEET #1

Number and Distribution of Workers

B. Tell how many workers are in this occupation, the parts of the country where they are located, and whether they are predominately in rural or urban settings.

Qualifications and Training Needed

C. What type of education, special talents, and physical requirements are needed for this occupation?

ASSIGNMENT SHEET #1

Chances of Getting a Job

D. What is the availability of employment in your area for this occupation?

CAREER ADVANCEMENT

E. What opportunities are there for promotions or career advancement in this occupation?

ASSIGNMENT SHEET #1

EMPLOYMENT OUTLOOK

F. What trends are happening in this occupation and how will they affect employment opportunities?

G. Name the range of entry-level salaries and fringe benefits offered in this occupation.

$ALARY & EXTRA BENEFITS

Work Conditions

H. Specify the type of working conditions you can expect in this occupation, e.g., indoor/outdoor work, need for heavy lifting, clean conditions.

ASSIGNMENT SHEET #1

Social and Psychological Factors

I. What will you enjoy about doing this type of work? Is it a high-pressure job?

____

____

____

____

____

____

Advantages and Disadvantages

J. Name what for you would be the main advantages and disadvantages of working in this occupation.

____

____

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____

____

ORIENTATION TO ALLIED HEALTH CAREERS
UNIT I

ASSIGNMENT SHEET #2 — EXAMINE JOB INTERESTS

What kind of job would you like to have? What aspects of the job particularly appeal to you? How important are they? This assignment should help clarify your feelings about the kind of job you would like to have.

Indicate the degree of importance you would personally attach to each of the following job aspects. Check Very Important (VI), Important (I), Unimportant (UI), or Very Unimportant (VU) in the appropriate box beside each aspect.

	VI	I	UI	VU
A. I could use my skills and talents in this job.	☐	☐	☐	☐
B. I would get a feeling of accomplishment from doing the work.	☐	☐	☐	☐
C. The job would involve lots of activity.	☐	☐	☐	☐
D. The job would have opportunities for growth and advancement.	☐	☐	☐	☐
E. I would be supervising others.	☐	☐	☐	☐
F. The company would carry out its policies and practices fairly.	☐	☐	☐	☐
G. My pay would compare well to that of other workers.	☐	☐	☐	☐
H. The company offers life insurance coverage for its employees.	☐	☐	☐	☐
I. The company offers sick leave and vacation leave.	☐	☐	☐	☐
J. My co-workers would be easy to work with.	☐	☐	☐	☐
K. I could try out some of my own ideas on the job.	☐	☐	☐	☐
L. I could work independently on the job.	☐	☐	☐	☐
M. The work would not be against my moral standards.	☐	☐	☐	☐
N. My work could be recognized by others.	☐	☐	☐	☐
O. Work decisions would be my own.	☐	☐	☐	☐

ASSIGNMENT SHEET #2

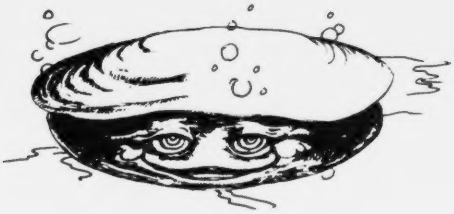
	VI	I	UI	VU
P. My job future would be reasonably secure.	☐	☐	☐	☐
Q. I would be helping other people.	☐	☐	☐	☐
R. Other people in the community could respect my position.	☐	☐	☐	☐
S. The company has a good training program for new employees.	☐	☐	☐	☐
T. The boss would back up the employees.	☐	☐	☐	☐
U. The job would have variety in its tasks.	☐	☐	☐	☐
V. The work would be indoors, using modern equipment.	☐	☐	☐	☐
W. The job would have no element of danger.	☐	☐	☐	☐

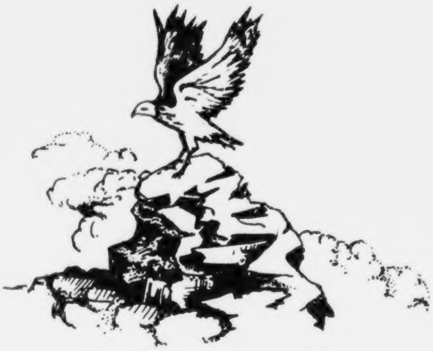
ORIENTATION TO ALLIED HEALTH CAREERS
UNIT I

ASSIGNMENT SHEET #3 — EVALUATE AN OCCUPATIONAL SELECTION

A majority of today's workers just "fell into" the kind of work they do without making any special plans. They took a job because it was "time" to get a job. Planning and careful evaluation can make the difference.

For the next forty-five years or so, you'll be spending close to half your waking hours working. Much of the nonworking half will be taken up with spin-off tasks related to your job: getting ready for work, commuting to work, taking lunch breaks at work, or resting up from work.





Consider the oyster. This little shellfish has it made in absolute economic and social security. The oyster has a house—a shell—to protect it from its enemies. When hungry, the oyster simply opens its shell and food rushes in for a tasty treat.

The eagle is something else. This bird sees the blue sky as the limit. The eagle must build its own house, often on the highest mountain crag where storms threaten it every day. For food, the eagle often flies through miles of rain and snow and wind. This winged creature is short on security but long on freedom.

Which way of living appeals more to you—good security or high risk? Or perhaps you do not think much of either extreme and would prefer something in between the life-styles of the oyster and the eagle. What you prefer is one thing. What you get depends on how wisely you choose a career. That is because the career you pick will be the number one influence on the kind of life you will have. It is a major factor in determining. . .

- The kinds of friends you will have
- How much money you will make
- How much you will travel and where
- The type of home you will be able to afford
- If you will always be supervised by others or perhaps be your own boss someday
- What kind of car you will drive

ASSIGNMENT SHEET #3

- How much leisure time you will have and how you will spend it
- The sort of person you will marry
- Where in the world you will live
- Whether you will look forward to steady paydays or live in fear of layoffs
- Personal health standards

Everything you do in the future will revolve around your choice of career. By far, selecting a career is one of the most critical decisions facing you at this stage in your life!!!

When you are selecting a career, you can determine, in general, whether a particular career is the right choice for you. Ask yourself the following questions about the occupation investigated in Assignment Sheet #1.

		Yes	No
1.	Is it CHALLENGING?		
2.	Is it INTERESTING and will the interest last over the years?		
3.	Can I meet the PHYSICAL and MENTAL STANDARDS of others in this field?		
4.	Is the SALARY close to what I need to live comfortably?		
5.	Is the work SATISFYING as well as PROFITABLE?		
6.	Will the WORKING CONDITIONS be an asset or a liability to my lifestyle?		
7.	Are there related fields where my skills will be VALUABLE, leaving me other OPTIONS?		
8.	Will it be PRACTICAL to acquire the necessary CREDENTIALS. . . or am I reaching too far?		
9.	Is the occupation EXPANDING—or might it become obsolete in the foreseeable future?		

ORIENTATION TO ALLIED HEALTH CAREERS
UNIT I

ASSIGNMENT SHEET #4 — INCREASE SELF-AWARENESS

Self-awareness can be called a prerequisite to personal development. To be able to make sound decisions about future direction, you must recognize your values, ambitions, and goals. Furthermore, you need to know your relationship to others and just how you fit into the scheme of life, whether at home, at school, or in the community.

The purpose of this assignment is to help you become more aware of yourself and your feelings. The following questions are to be answered quickly, relying on first thoughts, and should not be dwelt upon for any period of time. Use your answers for later reference in class discussion.

(NOTE: These questions have no right or wrong answers!)

1. What is your favorite color? ____________________
2. What subject do you enjoy most in school? ____________________
3. What is your favorite holiday? ____________________
4. What food pleases your appetite most? ____________________
5. What car do you like best? ____________________
6. What makes you sad? ____________________

   Happy? ____________________
7. If you could save one personal item, what would it be? ____________________

   ____
8. At what time in history would you choose to live? ____________________

   ____
9. If you had any one place you could visit, where would it be? ____________________

   ____
10. What special talents would you like to have? ____________________

    ____
11. What quality would you add to your personality or character? ____________________

    ____

ASSIGNMENT SHEET #4

12. What quality would you like to get rid of? ______________________________

____

13. What is your favorite pastime? ______________________________________

____

14. If you could spend one hour talking with anyone in the world, who would it be? __

____

____

15. What is your biggest problem or concern that you need to solve right now?______

____

____

The most important thing is how quickly and surely you are able to respond. Discuss and compare with classmates the difficulties encountered in answering how it might be possible to become more aware of self, and what self-awareness means. Remember:

SELF-AWARENESS

↓

SELF-ACCEPTANCE

↓

POSITIVE SELF-IMAGE

↓

SUCCESS

ORIENTATION TO ALLIED HEALTH CAREERS
UNIT I

ASSIGNMENT SHEET #5 — COMPLETE SELF-ASSESSMENT RATING

One of the best ways to assess yourself or your personality is to rate yourself honestly and critically. The self-rating list for the IDEAL health worker, given below, will help to give you some clues to the things health employers will look for in you.

Rate yourself as follows:
(5) Excellent
(4) Very Good
(3) Average
(2) Below Average
(1) Needs Improvement

_____ Clean uniform, attractive and appropriate dress (rate wearing apparel at this time)

_____ Clear, well-modulated voice

_____ Easily controlled posture in bending, sitting, walking, and standing

_____ Good physical health

_____ Poise and control, especially under difficult conditions

_____ Enjoyment of people and being with people

_____ Courtesy in dealing with clients and their relatives

_____ Ability to understand and appreciate other people's problems and responsibilities

_____ Promptness and reliability in reporting to the job

_____ Willingness to follow the rules and regulations of the institution

_____ Willingness to work to improve efficiency and working conditions

_____ Good sense of humor but not at the expense of others

_____ Cooperation with other staff members

_____ Enthusiasm that is sincere and contagious

_____ Constructive reaction to criticism

_____ Quick and accurate decision making

_____ Perseverance

ASSIGNMENT SHEET #5

_____ Willingness to look for opportunities to serve others better

_____ Exertion of positive leadership

_____ Freedom from prejudice

_____ Loyalty to superiors and associates

TECHNIQUES OF LEARNING
UNIT II

UNIT OBJECTIVE

After completing this unit, the student should be able to apply techniques of learning effectively to change study habits, retain information, and improve test scores. The student will show this knowledge by completing assignment sheets and the unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match terms associated with learning skills to their correct definitions.
2. State techniques for classroom learning.
3. Match techniques for remembering to their correct descriptions.
4. State techniques for taking notes in class.
5. Select from a list types of information found in dictionaries.
6. Match components of a book to their correct definitions.
7. List the steps for using a reading system.
8. Select from a list steps in surveying a textbook.
9. Select from a list guidelines for reading a textbook.
10. Select from a list techniques for developing successful study habits.
11. Select from a list purposes of examinations.
12. Match types of examination questions to their correct definitions.
13. Describe ways to prepare for examinations.
14. Select from a list points to remember when taking an exam.
15. Arrange in order steps in researching materials.
16. List computer applications for allied health careers.
17. Use techniques for remembering.

OBJECTIVE SHEET

18. Take notes on a classroom lecture.
19. Use a dictionary.
20. Complete a reading assignment, using a reading system.
21. Use library skills to research a health topic.

TECHNIQUES OF LEARNING
UNIT II

INFORMATION SHEET

I. Terms and definitions

A. **Evaluation** — Careful appraisal to determine significance or worth

B. **Key ideas** — Main points or important information taken from reading or lecture

C. **Learning** — Gaining knowledge, understanding, or skill by study, instruction, or experience

D. **Mnemonic device** — A memory aid

(NOTE: Pronounced nee-**mon**-ik.)

EXAMPLE: "The colors that make up white light are red, orange, yellow, green, blue, indigo and violet."

A mnemonic device of the colors can be made by taking the first letter of each word in order:

ROY G. BIV

E. **Remembering** — Putting facts and ideas into long-term storage in the memory and being able to recall them on demand

F. **Survey** — To examine in a general way; to get an overview

G. **Technique** — Method or procedure used to develop a skill

II. Techniques for classroom learning

A. Develop a positive, "can-do" attitude

(NOTE: If you take an active, aggressive interest in *learning*, and treat it as your current job, you will succeed. Like any other job, studying can be interesting and challenging if you approach it with enthusiasm.)

B. Attend all classes

C. Be on time

(NOTE: It is a good idea to arrive early and stay late to preview, ask questions, talk with other students, and listen to others' questions and discussions with the teacher.)

INFORMATION SHEET

D. Sit where you can see and hear and can be seen and heard

E. Read and complete assignments

F. Preview the day's assignment before class

(NOTE: Ten minutes of preview time saves up to an hour of review time.)

G. Come to class prepared to discuss and ask questions

H. Take careful, readable notes

(NOTE: See Section IV, Techniques for taking notes in class.)

I. Listen with your full attention

(NOTE: Often we *hear* but do not *listen*. Leave personal problems outside the door. Listening is one of the most important parts of your job as a learner.)

J. Ask questions when you do not understand

(NOTE: Do not be shy or afraid to ask! You are paying for your education, and your success depends on your learning. If you do not understand the answer you get, ask the question another way, and keep trying until you find out what you want to know.)

K. Review information as soon as possible after class

L. Get to know some other serious students

(NOTE: Exchange phone numbers with at least one good student in each of your classes.)

III. Techniques for remembering

A. Associate — Connect new information to something you already know

(NOTE: Association is the most effective memory tool because it is built on your own experience.)

EXAMPLES: "Stalactites are icicle-shaped deposits of carbonate of lime hanging from the roof of a cave. Stalagmites are cone-shaped deposits of carbonate of lime extending vertically from the floor of a cave."

1. Associate "carbonate of lime" with a bottle of carbonated lime drink or with lime-green carbon paper.

INFORMATION SHEET

2. Associate letters in the words with the location of the formation: Stalactites hang from the ceiling and there is a "c" in stala**c**tite and in **c**eiling; the "g" in stala**g**mite reminds you that it is on the **g**round.

3. Remember that stalactites "hang tight" to the ceiling.

B. Count — Learn the number of items involved

(NOTE: If you learn that there are *five* techniques for remembering and you can recall only *four*, then you know one is missing.)

C. Sound out — Make an image with sound

EXAMPLES: 1. Rhyme — In fourteen hundred ninety-two, Columbus sailed the ocean blue

2. Rhythm — Miss-iss-ippi

3. Rhythm and rhyme — Associate to make it mine;
Sound out a clever rhyme;
Count to get the right amount

4. Nonsense sentence — *Count* Dracula *associates* only with five *visually short* ladies who *sound out* when he bites.

D. Shorten — Take parts of the material, such as key words or the first letters of the items in a list, and arrange them into your own pattern or mnemonic device

(NOTE: The mind, eye, and muscles remember shorter items better than longer items.)

EXAMPLES: 1. *Count sounds, visualize* five *associated* short words.

2. Take the first letter of each word and make it into a new word that you can remember (called an "acronym" [**ak**-ro-nim]):

SCAVS: **S**ound out, **C**ount, **A**ssociate, **V**isualize, **S**horten

E. Visualize — Make a mental picture

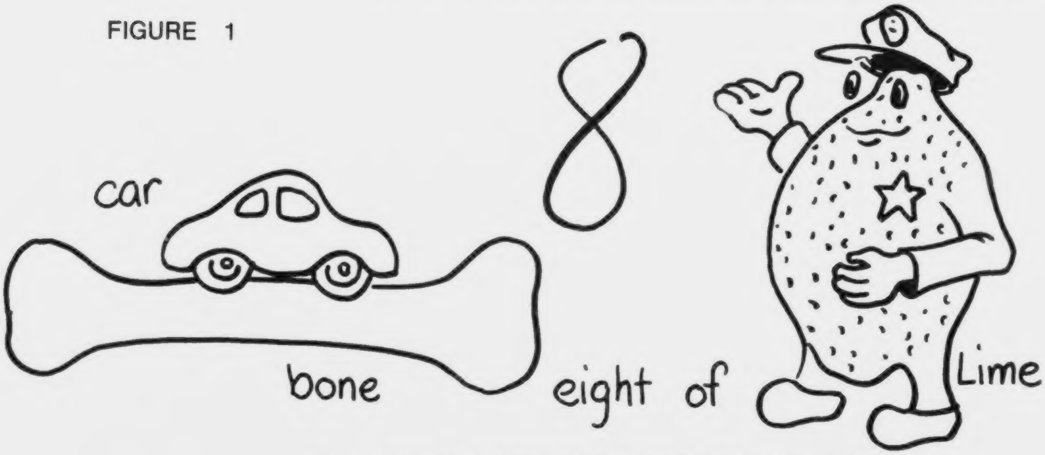
(NOTE: The picture may or may not be logical. Some memory specialists suggest that the more farfetched a picture is, the more likely you are to remember it.)

EXAMPLES: 1. Visualize a stalactite as a pair of tights hanging from the roof and "see" a stalagmite as rising up from the floor and covered with little bugs (mites).

INFORMATION SHEET

2. Visualize "carbonate of lime" — a car driving over a bone with an "8" and a lime dressed as a traffic cop (Figure 1)

FIGURE 1


car
bone
8
eight of
Lime

3. Visualize a piece of coal (carbon) eating a lime.

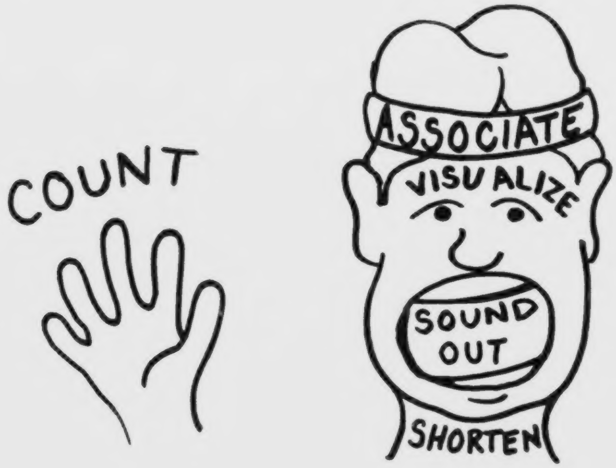
4. Make a mental picture of *Count* Dracula *associating* with five *visually short* ladies who *sound out* when he bites.

5. Place or locate information in a picture that you can remember (This is called "loci [**lo**-si] strategy." The example below uses the techniques for remembering) (Figure 2)

ASSOCIATE
VISUALIZE SOUND OUT
COUNT SHORTEN

OR:

FIGURE 2


COUNT
ASSOCIATE
VISUALIZE
SOUND OUT
SHORTEN

INFORMATION SHEET

IV. Techniques for taking notes in class

(NOTE: Notes on class lectures help you remember and help you understand. The very act of taking the notes means you are actively involved in the learning process.)

A. Be ready with your paper and pen before the class starts

B. Use looseleaf paper and write on only one side

(NOTE: This may seem wasteful, but it will allow you to arrange your notes in an order that makes more sense to you later. Some experts recommend that you write in a column half the width of the paper so you can add notes and comments from your reading or personal experience.)

C. Write down key ideas only

(NOTE: Your purpose is to understand the main ideas. Spend your notetaking time wisely. Keep notes brief. Your teacher will usually provide several examples to demonstrate a major point, but a single example should jog your memory.)

D. Listen and watch for behavior that "signals" key ideas

EXAMPLES: 1. "Body language" that points up the important information:
- pointing a finger or making a fist
- moving forward, leaning forward, or standing up straighter
- large gestures
- changes in the tone of voice
- pauses

2. "Warning words" that come before important information:
- "first,...second,...third"
- "the basic idea is..."
- "something you want to remember..."
- "the reason it works this way is..."
- "note that..."

E. Pay close attention to opening and closing remarks

EXAMPLES: "The purpose of today's lecture is...." "In conclusion...."
"Today we are going to cover...." "To review...."
"Yesterday we talked about...." "Going back over...."

F. Write down any idea that the teacher repeats

G. Copy diagrams, charts, and graphs from the board

INFORMATION SHEET

H. Develop a shorthand form of writing that works for you

(NOTE: Restate the idea in your own words.)

EXAMPLES: 1. Dvlp a shrthnd tht wrks 4 u

2. "The better your notetaking, the more you increase your learning."

↑ notetkng ↑ lrning

3. "By 1990, there will be 250,000 new jobs available in industrial electronics."

1990 → 1/4 mill. jbs avail - indus electrncs

I. Type or copy your class notes as soon after class as possible

(NOTE: By copying your notes, you can clarify your shorthand version and add examples and comments from class. New questions and viewpoints may occur to you while you are copying; write them down in preparation for the next class period. A side benefit of this process is that you are actually reviewing the material while copying your notes.)

J. Organize your notes in a pattern that makes sense to you

(NOTE: Organizing notes gives you an overview of the information and reinforces your understanding and remembering.)

EXAMPLES: Outline form
According to the history of the subject
Spatial or geographic form — by location
Alphabetical order
In series — first, second, third steps
In categories — all information related to a subject or process

V. Types of information found in dictionaries

(NOTE: In addition to the following standard information about words, many dictionaries may also contain such supplementary sections as biographical names, geographical names, and names of colleges and universities.)

A. Definitions

(NOTE: Many words have more than one meaning.)

B. Spellings and capitalizations

C. Pronunciations

INFORMATION SHEET

D. Syllables

(NOTE: At the end of lines, words are divided between syllables.)

E. Plurals

(NOTE: Most dictionaries list plurals only if the words do not follow the standard ways of making plurals.)

EXAMPLES:

Singular	Plural
Bird	Birds
Fish	Fish or fishes
Moose	Moose
Mouse	Mice

F. Synonyms

(NOTE: Synonyms are words that have similar meanings.)

EXAMPLE: A synonym of *buy* is *purchase*.

G. Antonyms

(NOTE: Antonyms are words that have opposite meanings.)

EXAMPLE: An antonym of *buy* is *sell*.

H. Parts of speech

(NOTE: The same word may be several parts of speech.)

EXAMPLES: What *book* are you reading? (noun)
Sergeant, *book* the suspect. (verb)
The picture on the *book* jacket is scary. (adjective)

I. Origins of words

EXAMPLE: *Caesar salad* originated in Caesar's restaurant in Tijuana, Mexico.

VI. Components of a book

(NOTE: Some books have additional parts that are not listed here. Many books have only some of these parts.)

A. Title page — Page that contains the name of the book, the author, and the publisher

INFORMATION SHEET

B. Copyright page — Page that contains the year of publication and the name of the person or company that owns the rights to the book

C. Table of contents — List of general topics and their page numbers, listed by sections, chapters, or subheadings

D. Foreword — Statement about the book, written by someone other than the author

E. Preface — Statement by the author about the book

F. Text — Body of the book

G. Appendix — Supplementary material that comes after the main part of a book

H. Glossary — Definitions of terms used in the book

I. Bibliography — List of other works used in writing the book

(NOTE: Some books call this component *references*.)

J. Index — List of specific topics used in the text and their page numbers

VII. Steps for using a reading system

(NOTE: There are several good systems that help you cut reading time while you increase your understanding. They all include the same basic steps; PQRST — preview, question, read, state, test; SQ3R — survey, question, read, recite, review; and OK4R — overview, key ideas, read, "rite," relate, review. Any of these systems *will work* if you stay with it — and you will get better with practice.)

A. Survey the whole chapter or unit

(NOTE: Read the title, the section headings, everything in **bold print** and *italics*, look at lists, pictures, graphs, and tables. Important ideas may be marked with bullets [●], arrows, stars, or different colored ink. Read the questions at the end of the chapter. When you are finished, you will have a good overview of the chapter.)

B. Read quickly until you are full of information, then stop

(NOTE: You may read the entire assignment, or just one page, or maybe even one paragraph. As you read, underline major ideas, and answers to the questions at the end of the chapter. If you don't understand something, look it up or ask. When you feel "full of information," STOP reading and go on to the next step.)

INFORMATION SHEET

C. Write down the key ideas immediately

(NOTE: Put down the book and for the first minute — 60 seconds — after you stop reading, write down the major points in a few words or sentences. The act of writing from your own thoughts fixes the information in your mind better than if you had copied it. Take another few minutes to survey again, making sure you got all the key ideas and got them right.)

D. Say the key ideas or key words out loud

(NOTE: Use your own words. Saying the ideas and hearing yourself help you form associations. This step tells you that you can go on to new material or that you should re-read the section.)

E. Record it in your mind

(NOTE: Put the information on your mental "tape machine" by connecting it with something you already know. Draw, diagram, make mnemonic devices, or use other techniques for remembering; find a logical system for relating the ideas.)

F. Review later, on a regular schedule

(NOTE: The actual amount of review you need depends on the type of material and on your own learning rate. The more memorization a course requires, the more time you will spend in reviewing. According to experts on learning, most people will benefit from a review schedule.)

EXAMPLE: 1st review: 5-10 minutes after learning
2nd: later the same day
3rd: a week later
4th: a month later
5th: just before the exam

G. Discuss with others

(NOTE: Going over the material with other students is an excellent way to review because you are reading, listening, and talking about the subject. Also, you will be sure your information is complete and correct.)

VIII. Surveying a texbook

A. Begin survey by looking through book from front to back

B. Read the preface to see what the author wanted to accomplish with the book

C. Look through the table of contents to see what you will be studying

D. Look at the pictures

INFORMATION SHEET

E. Notice the type of format the book uses

EXAMPLES: Outline, narrative, case studies, questions

F. Survey one chapter to see how the author organizes the material

IX. Guidelines for reading a textbook

A. Survey the textbook

B. Concentrate on the subject matter

(NOTE: Do not read to be reading; read to understand the information.)

C. Read for main ideas and important details

D. Underline or highlight main ideas and important details

(NOTE: One of the benefits of owning your textbook is being able to underline important information or write questions, examples, and comments in the margins. Of course, you would not do this to books owned by the school or library or someone else.

Do not underline when you are skimming over the unit, but do underline when you are looking for the most important ideas. Underline after you have read several paragraphs under one heading so that you will know you have the most important information.)

E. Read everything, including charts, tables, footnotes, and graphs

(NOTE: Try to read and understand each component of the book.)

F. Ask instructor for help if material is difficult for you to read

(NOTE: There are special courses and guides that can be used to help you read more effectively.)

G. Read with an open but critical mind

(NOTE: Remember that information given is one author's point of view. Look at other texts. Take into consideration the date the text was written. Learn to look at many sources.)

H. Coordinate what you read with what you learn in the classroom: develop a system of taking lecture notes that can be used with notes from texts

I. Look for ways to associate what you are reading with what you already know

(NOTE: View new facts as building blocks of related information.)

INFORMATION SHEET

J. Look for ways to apply what you are reading

(NOTE: Remember that the reason you are reading these books is to gain knowledge to be used when you begin practicing skills.)

EXAMPLES: Learn the digestive tract from top to bottom. This will help you understand many of the normal physiological processes that occur and are affected by certain medications and procedures.

Learn the basics of the disease process, and apply it to your area in health occupations.

X. Techniques for developing successful study habits

A. Schedule a regular, uninterrupted time for studying

B. Work in a quiet, well-lit, well-ventilated area

(NOTE: Study as a habit, in the same place at the same times. You will train your mind to concentrate as soon as you enter the study area.)

C. Have on hand all the tools you need to work effectively

EXAMPLES: Paper, pencils, rulers, dictionary, calculator

(NOTE: Include food if you eat while studying.)

D. Focus your attention on your work

(NOTE: Determine what is the most effective way for you to study. Leave personal problems outside your study area. Work in silence rather than with music or television playing if you find them distracting. Close your mind and ears to outside noises.)

E. Stop studying when you get tired or begin making mistakes

F. Study for short periods and take breaks

(NOTE: You will learn more in four one-hour sessions spread over four days than in a single six-hour session. Fifty minutes is the most time that an average person can study effectively.)

G. Get or make a course outline and always look for the overall view of the material

(NOTE: You will know where you are, where you are going, and what is expected of you. Your work will be much easier.)

INFORMATION SHEET

XI. Purposes of examinations

A. Assess knowledge or progress

B. Measure performance

C. Reinforce learning

D. Evaluate effectiveness of teaching

XII. Types of examination questions

A. True and false — Requires student to distinguish between correct and incorrect information

B. Multiple choice — Asks for one best response from a list of three or more responses

C. Matching — Asks student to indicate which item on one list is related to which item on another list

D. Completion — Requires recall of information (usually short-answer type) after being given partial information

E. Arrange in order — Asks student to rank statements or steps according to importance or sequence

F. Clinical performance — Uses a checklist, observation by instructor, or observation by a skilled professional to show student's progress in skill areas

(NOTE: You may not be graded by the patients or clients, but remember that they will be evaluating your work.)

G. Essay — Requires recall of information and writing a short, concise statement, paragraph, or page

H. Case study — Asks student to evaluate a statement or situation and then relate it to the information learned

XIII. Ways to prepare for examinations

A. Have a positive attitude

EXAMPLES: "I am going to study hard and do my best", rather than "I am going to flunk anyway, why study?"

INFORMATION SHEET

B. Follow a well-organized plan of review

(NOTE: Do not wait to cram the night before the exam. Study each day after class. Then review the night before you take the exam.)

C. Write legible, well-organized notes

D. Memorize needed facts, formulas, principles

(NOTE: There is some material in health occupations that will have to be memorized. Use the best method for you to recall information.)

E. Get a good night's sleep the night before the examination

F. Try to RELAX and enjoy learning

XIV. Points to remember when taking an exam

A. Follow directions carefully

(NOTE: Make sure you give needed information, such as name, date, and student number, in the places indicated.)

B. Note number of questions, value of questions, and time allowed

C. Assign each question an appropriate percentage of total time

D. Answer easier questions first, then go back and answer more difficult ones

E. Read question thoroughly before writing any answer

(NOTE: Make sure you pick out the key words that tell you the meaning of the question.)

F. If answer sheets are being used, check carefully that the number of the question matches the number of the answer

(NOTE: A good way to do this is by laying test and answer sheet side by side and keeping one finger on the answer sheet, sliding finger down or over to the next blank.)

G. Check to see that *all* questions have been answered

(NOTE: Many times your first answer is correct, so consider carefully if you decide to change an answer.)

XV. Steps in researching materials

(NOTE: Much research has been done on many subjects dealing with health. The knowledgeable individual can easily pull resource materials together to gain information to use in dealing with any health issue.)

INFORMATION SHEET

A. Write down all topics that may be covered in the area that you are researching

EXAMPLES: Birth control: history, types, controversial issues, new methods, disadvantages and advantages

Environmental diseases: government agencies that deal with environmental control, types of diseases caused from the environment, new diagnostic tests and treatments

B. Use a library source to find the topics you have listed

EXAMPLES: *Reader's Guide to Periodical Literature, Facts on File*, or a good scientific encylopedia index

(NOTE: If you are looking for a certain time period, look under the dates that you need. If you know the author's name of a certain article, look under that listing. The name of the article will be listed if you already have that information and want to find the name of the periodical containing the material.)

C. Read each article and write down in outline form the information most pertinent to the topic

(NOTE: Make sure you write down the source of information for reference.)

D. Summarize the information in a more formal way, depending on the use of the material

EXAMPLES: Formal report, oral presentation, personal use of material

XVI. Computer applications for allied health careers

(NOTE: Computer software packages are available for every health occupation. Most facilities use an integrated business software with approximately the same functions but with applications specific to their area. The general applications covered in this section are the most common and widely used in health occupations. With rapidly changing computer technology, new programs are constantly being developed. To get accurate, up-to-date information, contact a health care professional in your chosen occupation who uses computers on the job.)

A. Medical records

(NOTE: Most health-related software packages, such as that for physicians, veterinarians, dentists, nursing homes, etc., have this component.)

B. Diagnosis

(NOTE: Diagnosis may be a component of medical records or a separate listing.)

EXAMPLE: List of people or animals that share the same diagnosis

C. Anesthesia records

INFORMATION SHEET

D. Reminder generations

(NOTE: The computer reminds the staff to sent out notices for a client's next appointment. This application is especially useful for medical, dental, and veterinarian offices.)

E. Appointments

F. Charges

G. Billing

H. Inventory

I. Payroll

J. Accounts

TECHNIQUES OF LEARNING
UNIT II

ASSIGNMENT SHEET #1 — EVALUATE STUDY HABITS

NAME ______________________________ DATE ______________

This assignment sheet has no right or wrong answers, and you will not receive a score. It is to be used to evaluate and assist you in studying more effectively.

A. Answer the following questions about your study habits.

	YES	NO
1. Is your notebook standard size (8 1/2 × 11) with looseleaf paper?	☐	☐
2. Do you keep the notes for one course separated from the notes for other courses?	☐	☐
3. Do you take notes in shorthand or use other abbreviations?	☐	☐
4. Do you use brief phrases rather than complete sentences for notes?	☐	☐
5. Do you recopy notes taken in class so that the notebook will be neat?	☐	☐
6. Do you review notes of the previous class before studying the assigned lesson?	☐	☐
7. Do you use notes in studying for an examination?	☐	☐
8. Do you spend a great deal of time sorting papers before beginning to study?	☐	☐
9. Do you usually participate in class discussion?	☐	☐
10. Do you volunteer to answer questions in class?	☐	☐
11. Do you ask questions in class if you do not understand a point made in lecture?	☐	☐
12. Are you frequently late to class?	☐	☐
13. Do you frequently read your mail during class?	☐	☐
14. Are you frequently inattentive in class?	☐	☐
15. Do you sometimes write letters during a lecture hour?	☐	☐
16. Do you close your notebook, stack books, and get ready to leave before the bell rings for the end of class?	☐	☐

ASSIGNMENT SHEET #1

	YES	NO
17. Do you take all permissible "cuts" from class?	☐	☐
18. Do you turn in written assignments after the date due?	☐	☐
19. Do you frequently whisper to your neighbors during class?	☐	☐
20. If you receive a failing grade on a test, do you discuss it with the teacher?	☐	☐
21. Do you spend more time on subjects you like than on subjects you dislike?	☐	☐
22. Do you close the door to your room while studying?	☐	☐
23. Do you study with the radio turned on?	☐	☐
24. Is there adequate light for study?	☐	☐
25. Do you make an effort to reduce environmental distractions?	☐	☐
26. Do you study while reclining on the bed or in an easy chair?	☐	☐
27. Do you usually enjoy attending classes?	☐	☐
28. Do you have any articles on your desk that distract you while you are studying?	☐	☐
29. Can you get more done if you study in the library?	☐	☐
30. Do you frequently allow personal problems to interfere with your effort to study?	☐	☐
31. Do you know how to use the *Reader's Guide to Periodical Literature*?	☐	☐
32. Do you understand the card catalog system used in your library?	☐	☐
33. Do you resent having your class or clinical laboratory work criticized?	☐	☐
34. Do you seek help without being told you need it?	☐	☐
35. Do you usually go to bed not later than 11 P.M.?	☐	☐
36. Do you plan time for outdoor exercise each day?	☐	☐
37. Do you usually get up early enough to allow time for breakfast?	☐	☐

ASSIGNMENT SHEET #1

	YES	NO
38. Do you find you daydream when you should be studying?	☐	☐
39. Have you ever planned a schedule of activities for a day?	☐	☐
40. If you plan for study and work, do you follow such a daily plan?	☐	☐
41. Do you sometimes study early in the morning?	☐	☐
42. Do you always study at night?	☐	☐
43. Do you sometimes study in a free hour between classes?	☐	☐
44. Are you able to recognize the important points in an assigned lesson?	☐	☐
45. Do you study charts, diagrams, and other illustrations in the lesson?	☐	☐
46. Do you use the numbered subpoints, topic headings, or other chapter breakdowns as guides to learning?	☐	☐
47. Do you try to include in your notes the statements stressed in lecture?	☐	☐
48. Do you often argue with a teacher about examination questions marked wrong?	☐	☐
49. Do you feel that your teacher grades unfairly?	☐	☐
50. Do you often feel you know the lesson, then fail a quiz given in class?	☐	☐
51. Do you usually read the lesson hurriedly, then repeat for detail?	☐	☐
52. Do you read the listing of topical outlines before reading the chapter?	☐	☐
53. Do you turn topical headings into questions for study?	☐	☐
54. Do you underline as a means of studying a lesson?	☐	☐
55. Do you take brief, meaningful notes while studying?	☐	☐
56. Do you study with intent to remember material studied?	☐	☐
57. Is your handwriting illegible so that notes are hard to read?	☐	☐
58. Do you review the previous lesson before studying the assigned one?	☐	☐

ASSIGNMENT SHEET #1

	YES	NO
59. If you "had it to do over," would you still choose a health career?	☐	☐
60. Are you in a health career primarily to please someone else?	☐	☐
61. Do you feel that too much study is required of beginning students?	☐	☐
62. Is more emphasis placed on passing the test than on learning the subject material?	☐	☐

B. Look at all the questions you answered and decide what your strengths are. List them below.

____

____

____

____

____

C. Look at all the questions you answered and decide what your weaknesses are. List them below.

____

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____

D. List below ways you can improve your study skills and strengthen those weak areas.

____

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____

TECHNIQUES OF LEARNING
UNIT II

ASSIGNMENT SHEET #2 — USE TECHNIQUES FOR REMEMBERING

NAME ____________________ SCORE __________

Straight memorizing is the least effective way to remember. Information that is connected to something you know will stay with you much longer. Complete these exercises to help you learn and remember the information in Section IV of the Information Sheet, Techniques for taking notes in class and Section II, Techniques for classroom learning. Use this assignment sheet to review for the unit test.

PART I

Answer the following questions about Section IV, Techniques for taking notes in class.

A. Counting

1. How many items do you have to learn? ____________________
2. Write down a key word for each item. ____________________

   ____

   ____

3. Put the ideas in groups that make sense to you (no more than 4 groups).

4. How many groups are there? ______ Count the number of items in each group, and write it next to the group.
5. Make up a way to remember the number of groups and the number in each group.

   ____

   ____

ASSIGNMENT SHEET #2

B. Association

Choose one group from Question A and make up associations that you can remember.

____

____

____

____

C. Visualization

Choose a different group from Question A and make up a visual image. Describe it or draw it. Key words ________________________________

D. Sounding out

Choose a group from Question A (if you have more than two groups, choose one you have not used), and make up a device to sound out the key words in the group.

Key words ________________________________

Sound out ________________________________

____

____

ASSIGNMENT SHEET #2

E. Shorten

Take the key word from all items on the list and make a mnemonic device.

Key words ______________________________

____

____

Mnemonic device ______________________________

____

F. Practice writing out techniques for taking notes in class.

____

____

____

____

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____

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____

____

G. Do something else for 10 minutes.

H. Write the techniques for taking notes as well as you can without looking at your notes.

____

____

ASSIGNMENT SHEET #2

I. How many did you remember? ______ How many did you forget? ______

J. Write the items you did not remember on the extra lines above.

K. Make visualization or association devices for these items. Write them down.

PART II

Review the techniques in this exercise. Choose the ones that worked best for you and use them to learn and remember Section II of the Information Sheet, Techniques for classroom learning.

(NOTE: Work on Section II at another time. Similar subjects are easier to learn if they are studied in *different* study sessions.)

TECHNIQUES OF LEARNING
UNIT II

ASSIGNMENT SHEET #3 — TAKE NOTES ON A CLASSROOM LECTURE

NAME ______________________________ SCORE ______________

Taking good notes helps you listen to, learn, and remember the information in the lecture. In a study on notetaking, half the students took notes on a class lecture and half did not. When they took a test a *week later*, the students who took notes did much better than the students who only listened.

PART I

As your teacher covers today's material, listen for key ideas. Write them down in note form:

- Use your own words
- Keep your notes short — write key words, not sentences
- Use a shorthand, but be sure you can read it
- Use the right-hand column to write down your own comments and questions, and to relate the material to your own experience
- Watch for body language to signal important information

ASSIGNMENT SHEET #3

ASSIGNMENT SHEET #3

PART II

A. Read over your notes.

B. Make sure you can read them; if you have any questions, ask your teacher.

C. *Think* about the information and relate it to something you have learned before or to your own experiences, and write yourself notes in the right-hand column.

D. Organize your notes into a pattern that makes sense to you, and write it out in the space below.

(NOTE: Writing is the most effective way to remember something. You use your mind and your muscles to work with the new information.)

E. Review your notes one other time today.

TECHNIQUES OF LEARNING
UNIT II

ASSIGNMENT SHEET #4 — USE A DICTIONARY

NAME ________________________ SCORE ____________

Some people think that a dictionary is a book used only for finding word meanings or spellings. A dictionary, however, also shows verb forms, parts of speech, word origins, synonyms, and antonyms. It also shows how to pronounce words, how to form plurals, and how to divide words at ends of lines.

All dictionaries are not alike. Some dictionaries include many more words than other dictionaries. Some include additional information such as a list of colleges and universities; special tables and charts; or a section on correct punctuation. Some dictionaries specialize in terms used in a particular area.

Use a dictionary to find the answers to the following questions. Write your answers in the blanks.

A. What is the definition of

1. Podiatry? ____
____

2. Hypercalcemia? ____
____

B. How many syllables are in

1. Integumentary? ____________

2. Sphygmomanometer? ____________

C. What is the plural of

1. Datum?

2. Fetus?

D. Give a synonym of

1. Book ____________

2. Remedy ____________

E. Give an antonym of

1. Hearken ____________

2. Hyperglycemia ____________

TECHNIQUES OF LEARNING
UNIT II

ASSIGNMENT SHEET #5 — EXAMINE BOOK COMPONENTS

NAME ______________________________ SCORE ______________

Finding the right book is only part of an information search. After you have the book you want, you still have to be able to find the information you need. Knowing which part of a book to use will simplify your work.

Select two different health-related, nonfiction books to use in completing this assignment sheet. In Part I you will determine what components are in each book. In Part II you will answer specific questions about one of the books.

PART I

A. Write the title of each book you are using and then put a check beside the components found in each book.

Book A ____

Book B ____

	Book A	Book B
Title page	______	______
Copyright page	______	______
Table of contents	______	______
Foreword	______	______
Preface	______	______
Text	______	______
Appendix	______	______
Glossary	______	______
Bibliography	______	______
Index	______	______

B. Name and describe any additional components found in either of your selected books.

____

____

____

____

____

____

ASSIGNMENT SHEET #5

PART II

Use Book A or Book B—whichever has more different components—to answer the following questions. If a question is not appropriate for your book, write *NA* (not applicable) in the blank.

A. Who is the author? ____________________

B. What is the copyright date? ____________________

C. Who is the publisher? ____________________

D. The table of contents indicates the general structure of the book. Some books are divided into broad sections with several chapters in each. Other books have chapter titles and subheadings. Name one of the broad sections or chapter titles found in your table of contents.

____

E. Who wrote the foreword? ____________________

F. What do you think is the most important statement in the preface of your book?

____

____

____

G. What type of material is in the appendix of your book?

____

____

____

H. Name one term found in the glossary and give its definition as used in this book.

____

____

____

I. How many other works are cited in the bibliography? ____________________

Name one. ____________________

TECHNIQUES OF LEARNING
UNIT II

ASSIGNMENT SHEET #6 — COMPLETE A READING ASSIGNMENT, USING A READING SYSTEM

NAME ______________________________ SCORE ______________

Reading with a system can help you learn more in less time than if you read from beginning to end as most people do. Taking good notes on your reading means that you do not have to re-read the assignment in order to review and study for your test. Taking notes will help you remember what you read, but thinking about it and relating what you read to what you already know will ensure that you really *learn* what you have read.

PART I — Preparation

A. Write down the reading assignment.

B. Review Section VII of the Information Sheet, Steps for using a reading system.

C. Have on hand all the tools you need.

EXAMPLES: Your class notebook or looseleaf paper, pencils or pens, a clock or watch

D. Draw a line down the approximate middle of your notebook paper.

PART II — Procedure

Follow the procedures below and check off each step as you complete it. Answer questions where required.

(NOTE: These procedures have been tested and are proven to work. After you have used a system for several weeks, you will discover ways to adapt it to your own study habits. Your system will become a learning skill and you will find that you are learning more in less time and with less effort.)

A. Survey the whole chapter

______1. Title

______2. Section headings

______3. Everything printed in such a way as to get your attention

______4. Pictures, graphs, maps (read titles and all other information)

______5. Questions at the end of the chapter

6. In a few words, what is the overall purpose of the chapter?

____

ASSIGNMENT SHEET #6

7. How does this chapter fit in with what you've studied thus far?

____

____

B. Read quickly until you are full of information, then stop.

C. Look up words you do not understand.

D. Put down your book.

E. For 1 minute — 60 seconds — write down the key ideas in the left-hand column.

F. Go over your reading again, then write down any ideas you missed.

G. Say the key ideas or key words out loud.

H. Use a technique for remembering to record the key ideas in your mind.

I. Use the right-hand column to note your associations, reactions, questions, and points that help you relate the reading to what you already know.

J. Repeat steps B through E until you have finished the assignment.

K. Organize your notes in some pattern and write them in the space below.

L. Wait 5-10 minutes, then review your notes.

M. Review them later today.

ORGANIZED NOTES

TECHNIQUES OF LEARNING
UNIT II

ASSIGNMENT SHEET #7 — USE LIBRARY SKILLS TO RESEARCH A HEALTH TOPIC

NAME ________________________________ SCORE ______________

There will be many times that you will need to look up material relevant to a health topic. This information will be needed to solve problems, answer questions, or write reports. In this unit you were given instructions on how to research materials. Using this information, research a topic given to you by your instructor. Respond to each part of this assignment sheet, using the information you gather. Use three different sources.

PART I

Write down all topics that might contain information you need.

____

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PART II

List library resources from which you have taken the information.

____

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____

ASSIGNMENT SHEET #7

PART III

Write down the most pertinent information from each article.

ASSIGNMENT SHEET #7

PART IV

Summarize the information, writing down what you feel is most important.

PERSONAL AND VOCATIONAL RELATIONSHIPS
UNIT III

UNIT OBJECTIVE

After completing this unit, the student should be able to communicate effectively and develop rapport with others. The student will show this ability by completing the unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match to their correct definitions terms associated with human relations.
2. List ways to improve relationships with others.
3. Match to their correct definitions terms associated with communication.
4. List purposes of communication.
5. Select from a list ways to improve communication.
6. Match techniques of verbal communication to their descriptions.
7. State guidelines for effective listening.
8. Select from a list techniques of nonverbal communication.
9. Describe barriers to communication.
10. Select from a list guidelines to establish rapport between the health care worker and other health professionals.
11. Name guidelines to establish rapport between the health care worker and clients and their families.
12. Select from a list basic principles of communication for all health care workers.
13. Describe considerations for communicating with a special needs client.
14. List important information to consider when explaining a treatment or procedure to clients and their families.
15. List written resources that provide information for effective client care.
16. Name routine information given to clients and their families at the time of treatment.

OBJECTIVE SHEET

17. Describe ways to handle awkward situations where communication may be difficult.
18. State guidelines for communicating by telephone.
19. State guidelines for communicating in writing.

PERSONAL AND VOCATIONAL RELATIONSHIPS
UNIT III

INFORMATION SHEET

I. Terms associated with human relations

  A. **Anticipate** — To foresee and deal with in advance

  B. **Attitude** — Conscious or unconscious mental views developed through cumulative experience

  (NOTE: These views cause certain behaviors towards people, groups, things or situations. Attitudes can be positive or negative.)

  C. **Emotion** — Any specific feeling that results in mental and physical effects

  EXAMPLES: Fear, love, hate, anger, grief, joy

  D. **Evaluation** — Determination of worth or significance by careful appraisal or study

  E. **Feeling** — Subjective response or reaction; an emotional state or reaction

  F. **Judgment** — Process of forming an opinion or evaluation

  G. **Prejudice** — Judgment or opinion formed at an earlier time or from previous experience; preconception

  H. **Rapport** — Relationship based on closeness and understanding

  I. **Relationship** — Association between people

  J. **Stereotype** — Something conforming to a fixed or general pattern

  K. **Trust** — To place confidence in someone

  L. **Unbiased** — Free from prejudice

  M. **Value** — Measure of worth or efficiency

II. Ways to improve relationships with others

  A. Think before you speak

  (NOTE: Follow the old adage of "If you can't say something nice, don't say anything at all" if you are to develop a working rapport with others.)

  B. Use a pleasant tone of voice

INFORMATION SHEET

C. Keep a pleasant smile on your face; try to remain cheerful with a positive outlook

D. Be very careful of other people's feelings; laugh *with*, not *at* the person

E. Keep an open mind and be willing to discuss issues, not argue

F. Keep promises that you make; do not make promises that you cannot keep

G. Regard all others without bias or judgment

H. Be interested in who others are and what they are doing

I. Look for opportunities to say something kind or encouraging to those around you

(NOTE: *Misconception* is the result of a misunderstood observation.)

J. Show sympathy or empathy for others

(NOTE: You may express sympathy or empathy either verbally or with a gentle touch.)

K. Be patient and tolerant of those who because of emotional or physical problems are demanding or irritating

III. Terms associated with communication

A. **Accurate** — Free from error

B. **Assessment** — Purposeful gathering and analysis of pertinent information

C. **Barrier** — Something that hinders or separates

D. **Communication** — Exchange of thoughts, feelings, and information by verbal and nonverbal messages

E. **Expression** — Look, intonation, or sign that conveys meaning or feeling

F. **Identify** — Recognize; be aware of

G. **Impression** — Effect left on the mind due to an experience

H. **Inflection** — Change in pitch or loudness of the voice

I. **Legible** — Plain, easily read

J. **Medical record** — Written, legal document of the history and progress of a patient

K. **Nonverbal** — Relating to communication other than with words

INFORMATION SHEET

L. **Observation** — Noting a fact or occurrence

M. **Perception** — Result of an observation; awareness of a symptom

(NOTE: *Misconception* is the result of a misunderstood observation.)

N. **Verbal** — Relating to words, including reading, writing, listening, and speaking

IV. Purposes of communication

(NOTE: Communication is both verbal and nonverbal. We communicate by reading, writing, talking, listening, touching, and using body language. Our every word and action tells something.)

A. Obtain knowledge

B. Give information

C. Socialize

V. Ways to improve communication

A. Get the listener's attention

B. Use questions wisely

(NOTE: Find out what the person already knows and if the person understands what is being said.)

C. Talk about one subject at a time

D. Avoid using technical terms unless you know the listener is familiar with them

(NOTE: This is especially important in communication from health worker to client. Use lay terms as much as possible; but when you have to use technical terms, explain their meanings.)

E. Plan what you are going to say in advance

F. Encourage the listener to ask questions and participate

(NOTE: Stress that there is no question too foolish to ask, and that you are willing to spend the time answering questions.)

G. Listen

(NOTE: Many times we *hear* but do not *listen*.)

H. Think before you respond to questions

(NOTE: Make sure that the information you give is correct and plan how you will give the information.)

INFORMATION SHEET

   I. Speak distinctly

   J. Be aware of your nonverbal communication

   (NOTE: Often a message can be picked up from your facial expression that you may not have meant to send.)

   K. Use client's first name if client is a child or clearly indicates a wish to be called by first name

VI. Techniques of verbal communication

(NOTE: Depending on one's interpretation, verbal communication may also include tone of voice.)

   A. Open-ended comments or questions — Bridging or transitional phrases that encourage people to continue speaking

   EXAMPLES: "And then what did you do?"

   "You were saying that..."

   B. Reflecting or repeating — Restating part of a person's statement in the form of a question; exploring underlying feelings

   EXAMPLE: You: How are you this morning?

   Client: I'm fine.

   You: You're fine?

   Client: No, not really. I feel very tired today.

   C. Sharing observations — Commenting on client's behavior

   EXAMPLE: You notice that the client has tears falling down his or her cheeks. Instead of automatically deciding why, you may say, "You're crying. Can you tell me why?"

VII. Guidelines for effective listening

   A. Let the speaker finish and do not interrupt

   B. Be patient

   C. Do not criticize or prejudge

   D. Try to put yourself in the other person's place

   E. Clarify points or statements that you do not understand

INFORMATION SHEET

VIII. Techniques of nonverbal communication

A. Touch

(NOTE: Many messages can be transmitted through physical contact.)

EXAMPLES: A gentle touch can be of great comfort to someone who is ill or anxious.

Extending a limp hand towards someone when you are introduced conveys a totally different message than a firm handshake does.

B. Facial expressions

(NOTE: Moving your mouth, eyes, eyebrows, etc. can make your opinions or feelings known without saying a word.)

EXAMPLES: Grimacing; frowning; rolling the eyes; not meeting the listener's eyes; fixing eyes intently on the listener's

C. Gestures

(NOTE: Most of us are unaware of the gestures we use as they are mostly an unconscious mechanism.)

EXAMPLES: Clapping, nodding or shaking the head

D. Body movements

EXAMPLES: Arms folded tell you that the person does not want to talk to you.

Drumming fingers indicates impatience.

Slouching or turning the body away indicates indifference.

E. Appearance

(NOTE: A person with no self-respect usually neglects his appearance. Body odor also conveys a message; unpleasant odors tell us that this person is insensitive to his or her own odors and also has little concern over being offensive to others.)

IX. Barriers to communication

A. Failure to see a person as an individual — Biased or value judgments, including stereotyping and preconceptions of people, prevent one from seeing the other person as he or she really is

EXAMPLES: "All (Irish, Italian, Jewish, Polish, Catholic) people behave in certain ways."

"All males are chauvinists."

INFORMATION SHEET

B. Failure to recognize hidden meanings of communication — Words have different meanings to each individual

EXAMPLE: CLIENT: What will the tests show?

HEALTH WORKER: Ask your doctor.

The client's question may have many different meanings, and you must ask questions to determine the real reason for the question. Whenever possible, answer the question with a question; this allows the other person to express concerns.

C. Failure to listen — The health care worker may be too tired or bored, or client may be too ill or upset to understand what is being said

D. Use of clichés and automatic responses — Statements are sometimes used to avoid interaction between people

EXAMPLES: "Don't worry. Everything will be fine."

"It's only minor surgery."

"Animals are not the same as people."

"Mr. Brown had the same condition, and he is doing fine."

"Don't worry about a thing."

E. Interrupting before the client has finished — Interrupting gives the impression that you are in a hurry or that what the person is saying is not important

F. Failure to clarify comments — Assuming that you know what the client said may lead to misunderstandings

G. Limited vocabulary — The client may not understand words that are common to you

(NOTE: Use words the client can understand, and give an example of what you think the client has said, to ensure that you both mean the same thing.)

H. Failure to recognize cultural differences — Each culture has different attitudes, beliefs, and ideas; what is acceptable to one culture may not be to another

(NOTE: Some cultures differ only slightly while others differ greatly.)

EXAMPLE: Asian people may consider direct eye contact to be disrespectful.

INFORMATION SHEET

X. Guidelines to establish rapport between the health care worker and other health professionals

A. Respect the other person

(NOTE: As part of a health team, each member plays a significant part in the care of the client. You must have respect for your co-worker's dignity and profession.)

B. Express yourself clearly and distinctly

(NOTE: Misunderstandings can occur if you do not communicate clearly. You may know what you mean, but others might not understand.)

C. Discuss information concerning the client's individual needs that would be helpful to co-workers involved in the client's care

(NOTE: Discuss this in a professional manner. Do not discuss confidential information in a public place where you can be overheard. Do not gossip.)

D. Use the proper chain of command when dealing with problems

(NOTE: Any problem should be taken to your direct supervisor. If it cannot be resolved at that level, then it can be taken to the person your supervisor reports to.)

XI. Guidelines to establish rapport between the health care worker and clients and their families

(NOTE: As a health care worker, you will be communicating with a variety of people every day. These individuals will look to you as a source of information. How you communicate will affect the rapport that you develop with each person. Even if you choose a health occupation that deals with animals, such as veterinarian or laboratory assistant in research, you will need to communicate with the animals and/or their owners.)

A. Put yourself in the client's place

(NOTE: Ask yourself how you would feel in the client's place and how you would like to be treated.)

B. Use verbal and nonverbal communication

(NOTE: Even an unconscious client may still be able to hear you, so say nothing that would upset the person. Never handle a client roughly; your touch should be light but firm.)

INFORMATION SHEET

C. Show empathy for the client and family

(NOTE: As a health care worker, you need to consider not only the feelings and needs of the client, but also those of the family. Help the client cope with his or her feelings, and assist the family in understanding the client's needs.)

D. Speak to the client and family on their level of understanding

(NOTE: A person outside the health occupations can become very confused by medical terminology. You will have better cooperation from the client and family if they understand what is happening.)

E. Whenever possible, allow the client and the family to take part in decisions regarding the client's care

XII. Basic principles of communication for all health care workers

A. Establish eye contact with the client

(NOTE: For many Asians or American Indians, eye contact may give the wrong communication cue.)

B. Listen carefully and concentrate on what the client is telling you

C. Take time to listen

(NOTE: Do not look at your watch or keep moving towards the door as if you are in a hurry to leave.)

D. Observe the clients carefully while they are talking to you

(NOTE: Pay attention to the nonverbal communication being used. A client may say one thing, but indicate another.)

E. Turn direct questions back to the client for further explanation

(NOTE: Answer a question with a question, and allow the client to express concerns.)

F. Do not whisper in a client's presence

(NOTE: Clients may think you are talking about them when in fact you are discussing someone or something else.)

G. Do not diagnose unless that is your function

(NOTE: If asked for information you are unsure of or are not qualified to give, refer the client to the appropriate person.)

INFORMATION SHEET

H. Tell the client the truth when possible

(NOTE: Do not lie to the client. If necessary, it may be wise to say nothing, answer with a question, or say, "I don't know.")

I. Do not anticipate what the client is going to say

J. If the instructions are critical, have the client repeat them

K. Nod your head to indicate understanding

XIII. Considerations for communicating with a special needs client

(NOTE: In every area of health occupations, there will be clients with special needs, and you will have to develop methods of communication. The communication problem may be a physical or mental one that should be assessed and a solution to the problem found and shared with all the health workers involved with the client. A consistent form of communication should be agreed upon and used; the method should be noted in the client's record. DO NOT avoid the client if an impediment exists.)

A. Hearing

1. Make sure the health workers know the consistent method of communication

2. Do not startle clients if they do not see you enter the room

3. Speak directly to clients so that they may read your lips

   (NOTE: Speak distinctly, but do not exaggerate. Avoid slang words.)

4. Speak distinctly, especially when you are giving instructions or explaining procedures

   (NOTE: Use pictures whenever necessary to help you clarify your explanation.)

5. Make sure a resource person is obtained when the client uses sign language, or make allowances for trained family members to be there when interpretations are needed

   (NOTE: If the client is old enough, written notes may be helpful.)

6. If client is wearing a hearing aid, speak in normal tones while facing the client.

B. Speech or language

1. Base your method of communicating on the condition of the speech problem

   EXAMPLE: If a client has had a laryngectomy and has not yet learned to speak again, have materials on hand so the client can write notes.

INFORMATION SHEET

2. Be patient with the person who has a speech impediment such as stuttering or lisping

   (NOTE: The impediment may be worse if the person is flustered or embarrassed.)

3. Obtain an interpreter for clients who speak a foreign language

   (NOTE: Remember that speaking louder does not help someone who does not understand your language. If family members cannot be present to interpret for you and the client, and if none of the staff members can speak the client's language, contact an interpreter in the community.

   Visuals are available that have general medical questions in different languages that the client may read. *Taber's Cyclopedic Medical Dictionary*, for example, has common words of basic medical diagnosis and treatment in five languages.)

C. Sight

1. Clients who have limited vision should have large typewritten materials available

2. Do not startle the client by coming hurriedly into the room, or touching him or her without first speaking

   (NOTE: Knock softly on the door, call the person by name, and state your name. Prepare the client for each step in the procedure by explaining each step before you do it.)

3. Obtain materials and equipment that your client is comfortable in using for communication

   EXAMPLES: Tape recorders, braille books

XIV. Important information to consider when explaining a treatment or procedure to clients and their families

(NOTE: Keep instructions simple and brief. Allow the client to respond.)

A. Description of the treatment or procedure

B. Words the client and family can understand

C. Purpose or desired outcome of the treatment or procedure

D. Client's part in carrying out the treatment or procedure

INFORMATION SHEET

E. Indication as to how it will feel

F. Frequency of treatment

G. Duration of the treatment

EXAMPLE: "Mr. Smith, I am going to be taking a chest x ray as ordered by your doctor. I will have you lie flat on the table, which may feel a little hard. I will ask you to please hold your breath while I flip a switch to take the x ray, and I will tell you when to breathe again. We will be through in about fifteen minutes. Is that all right with you, Mr. Smith?"

XV. Written resources that provide information for effective care of the client

A. Client's chart or record

B. Kardex

C. Care plan

D. Policy and procedure manual

E. Computer data bank

XVI. Routine information given to clients and their families at the time of treatment

A. Your name and title

(NOTE: When entering a room, be sure to call the client by his or her name and identify yourself.)

B. What you are going to be doing for the client

EXAMPLE: "Miss Jones, I will be cleaning your teeth this afternoon."

C. Length of time you will be with client

EXAMPLE: "This will take about thirty minutes."

D. Specific activities or treatment for which the client is scheduled

EXAMPLE: "After your teeth are cleaned, the dentist would like some x rays of your mouth."

INFORMATION SHEET

XVII. Ways to handle awkward situations where communication may be difficult

A. When the client asks personal questions

1. Decide what personal questions you can answer

EXAMPLES: "What made you decide on a health career?"

"What is your phone number?"

(NOTE: Obviously you could answer the first question without divulging information you do not feel the client needs. The second could be answered honestly, "It is against company policy for us to give out our home phone numbers.")

2. Remember that the client usually asks these questions because he or she is interested, lonely, uncomfortable, or bored

(NOTE: The best solution is to answer the questions you feel comfortable with and do not let the client know if you are shocked. Handle yourself with tact and maturity if you feel you should confront the client with what has been said. If in doubt, ask your instructor.)

B. When clients ask questions about other clients

1. Never reveal privileged information

EXAMPLE: If the patient in the hospital dies, and another patient asks about the death, you may ethically say, "Yes, the patient did die." No other details need to be given.

2. Give the client the reason for not answering; do not hurt his or her feelings because the person may be genuinely concerned

(NOTE: If someone asks for another person's diagnosis, say "I'm sorry, but I'm not allowed to divulge that information.")

C. When the client asks about own condition or diagnosis

1. Explain that it is not your role to make diagnosis

2. Tell the doctor what the question or concern is

D. When a client refuses treatment

1. Ask questions to find out why a client does not want the treatment

EXAMPLE: RESPIRATORY THERAPY ASSISTANT: Good morning, Mr. Davis. It is time for your oxygen.

MR. DAVIS: I don't want my oxygen today.

INFORMATION SHEET

R. T. ASSISTANT: You don't want your oxygen? Can you tell me why?

MR. DAVIS: The mask makes me feel like I am suffocating.

R. T. ASSISTANT: We can fix that by giving you a cannula. You will probably find it more comfortable.

MR. DAVIS: Thank you. I feel better after getting the oxygen, but I just couldn't stand that feeling.

2. Give extra reassurance to encourage the client to take part in the treatment

EXAMPLE: MRS. HORNER: I just had the cast taken off my arm today. Surely you don't expect me to exercise my arm when it is so stiff and painful.

PHYSICAL THERAPY ASSISTANT: I understand it must be uncomfortable for you; but if you don't exercise it, your muscles will stiffen up even more. We want you to have full function of that arm again.

MRS. HORNER: I guess I can see the need for it; I didn't realize that not moving it could make it worse.

E. When client complains about the care he or she is receiving

1. Find out the true reason for the complaint

2. Do not become defensive; allow the client to vent feelings

EXAMPLE: CLIENT: Why doesn't the doctor ever stay long enough for me to ask all my questions? She doesn't have time for me, and I pay her good money.

MEDICAL ASSISTANT: Dr. Hansen is extremely busy, but I am sure she can answer your questions. It might be a good idea to write your questions down so you will remember them when you come for your next appointment.

XVIII. Guidelines for communicating by telephone

A. Answer the telephone promptly and courteously

B. Use a pleasant tone of voice

(NOTE: Smiling when you answer the phone produces a pleasant tone of voice.)

INFORMATION SHEET

C. Speak clearly but not too loudly

(NOTE: You do not have to speak loudly to be effective.)

D. Identify yourself by giving your name, location, and title

EXAMPLES: Mr. Johnston, Tate Veterinary Clinic, Veterinary Assistant.

Miss Smith, Secretary, Medical Records

E. Note caller's name, and make sure you have accurate information

(NOTE: If you do not understand what has been said or need time to write the information down, ask the caller to repeat what he or she has said.)

XIX. Guidelines for communicating in writing

A. Write legibly

(NOTE: Everyone must be able to understand what you have written. It may be a life-or-death situation if something you have written has been misunderstood. It is also wise to remember that you may be called into court to verify your written communication.)

B. Spell correctly

C. Use correct medical terminology

D. Use a method for correcting errors that is accepted by your particular facility

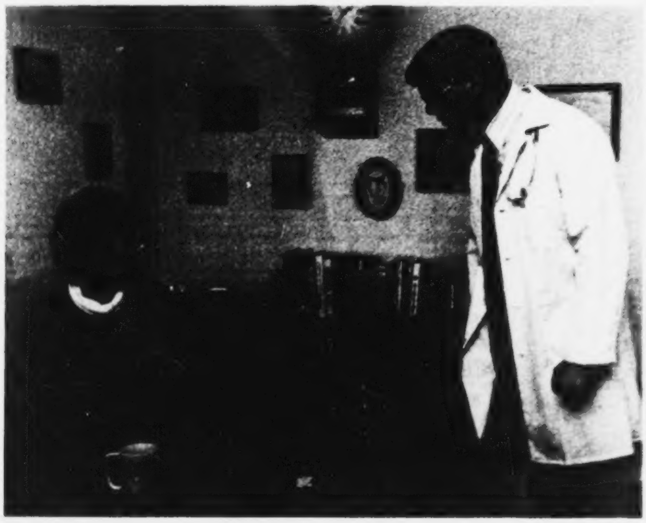
PERSONAL AND VOCATIONAL RELATIONSHIPS
UNIT III

ASSIGNMENT SHEET #1 — EVALUATE NONVERBAL COMMUNICATION

NAME ______________________________ SCORE ______________

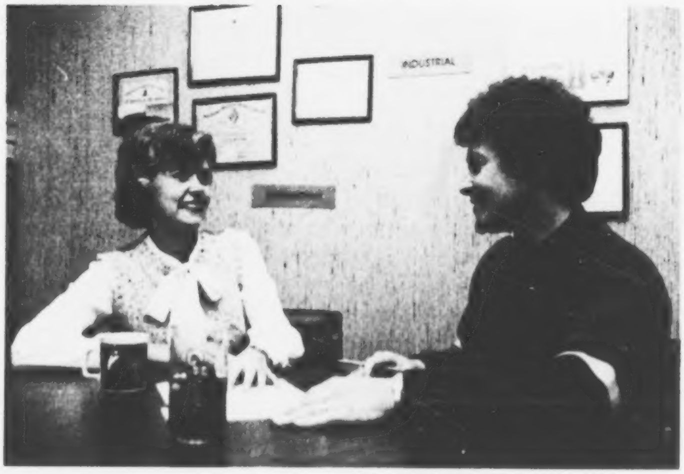
Review the components of nonverbal communication; then observe the people that you come in contact with, and think about what they are telling you nonverbally. As a health care worker, you need to recognize nonverbal communication. Look carefully at the following photographs, and write in the spaces provided what you think is being communicated through body language.

A.

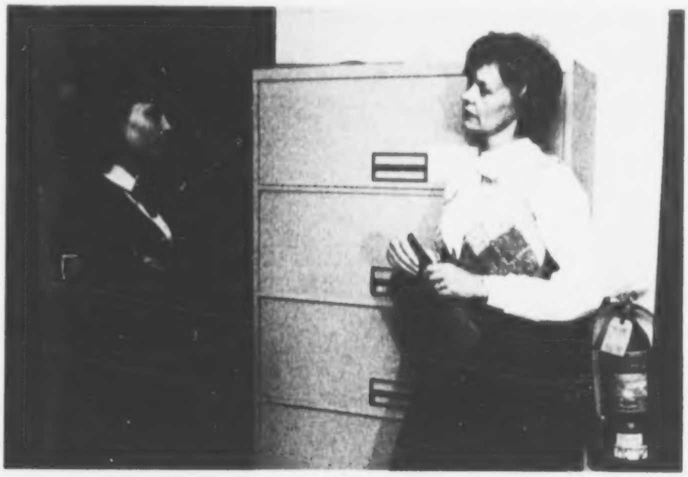


ASSIGNMENT SHEET #1

B.

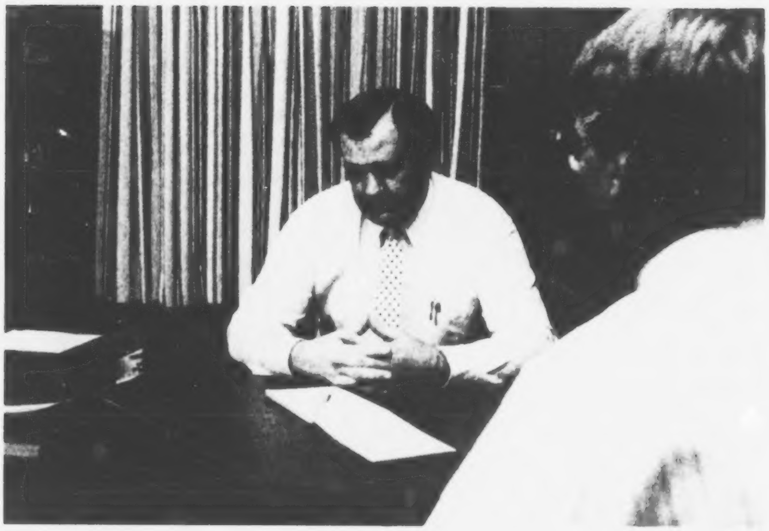

INDUSTRIAL

C.



ASSIGNMENT SHEET #1

D.



PERSONAL AND VOCATIONAL RELATIONSHIPS
UNIT III

ASSIGNMENT SHEET #2 — PRACTICE COMMUNICATION SKILLS

NAME ______________________________ SCORE ______________

Effective communication between people is the key that opens the door to meaningful relationships. As a health care worker, you must develop communication techniques to use with clients, family members, and co-workers. Respond in writing how you would communicate in the situations depicted and explain why you chose that response. Remember all the communication techniques you have learned.

A. Client: I hear the dentist is having trouble with his marriage, and that he is getting a divorce. Is that right?

Response: ______________________________

____

Reason for response: ______________________________

B. Client: I see the vet has a new pickup, and I saw his wife driving a new-looking car. He must be making a bundle. I must be in the wrong business. What is the salary range for a veterinarian?

Response: ______________________________

____

Reason for response: ______________________________

____

C. Patient: The lady in the next bed to me has been crying most of the day. I heard she was getting an abortion. Is that right?

Response: ______________________________

____

Reason for response: ______________________________

____

D. Client: I have been coming to you for physical therapy for weeks now, and I don't feel any stronger. I sometimes think this is a waste of my time.

Response: ______________________________

____

Reason for response: ______________________________

____

ASSIGNMENT SHEET #2

E. Patient: I am here today for the results of my test. You must have seen my reports. Do I have cancer?

Response: ____

____

Reason for response: ____

PERSONAL AND VOCATIONAL RELATIONSHIPS
UNIT III

ASSIGNMENT SHEET #3 — PRONOUNCE WORDS DISTINCTLY

NAME ____ DATE ________________

In order to communicate clearly and correctly, you must be able to pronounce words distinctly and correctly. To practice this skill, complete the following exercises.

A. Read the following tongue twisters aloud. Be careful not to omit any necessary vowel or consonant sounds.

1. Strict, strong Stephen Stringer snared slickly six silly snakes.
2. Strong students struggle with strange strategic statistics.
3. Shy Sarah saw Swiss wristwatches.
4. The sixth sheik's sixth sheep's dead.
5. Tie the twine to three tree twigs.
6. With which winsome witch were you whispering?
7. Well, when Will whiffed the wild wintry wind, he whisked out his wicked whiskey.
8. At her willful whim, the whip whizzed over the wheelbarrow where Willy was whimpering.
9. Six long, slim, slick slender slacks slid silently to the floor.
10. Furthermore, Francis Farkwark fried fifteen fish for Francis Fambush's father.
11. She stood on the balcony, mimicking him hiccupping and welcoming him inside.
12. A snifter of snuff is not enough snuff for the snuff sniffer to sniff.
13. Slippery sleds slide swiftly down slick streets.
14. Thomas Tattertoot took tough twine to tie ten twigs to two tall tree trunks.
15. What whim led Whitney White to whittle, whisper, and whimper near the wharf where a whale might wheel and whirl?
16. I never felt felt feel like that fine felt felt.

ASSIGNMENT SHEET #3

B. Read the following aloud. Be careful not to omit any necessary vowel or consonant sounds.

1. Bringing
2. Picture
3. Candidate
4. Laboratory
5. Midst
6. Fifths
7. Width
8. Pitcher
9. Prairie
10. Route
11. Window
12. Creek
13. Library
14. Often
15. February
16. Wash
17. County
18. Get

PERSONAL AND VOCATIONAL RELATIONSHIPS
UNIT III

ASSIGNMENT SHEET #4 — ANALYZE VOICE QUALITIES

NAME ______________________________ DATE ______________

Make a tape recording of your voice. Then listen to the tape and complete the rating below. Using the rating of your voice on tape, prepare a list of ways in which you can improve it. Complete the list on a separate piece of paper.

Have your classmates rate your voice, too. Check back periodically to see if there has been any noticeable progress.

VOICE RATING	**Yes**	**Maybe/ Sometimes**	**No**
1. Do you speak too loudly or in a noisy manner?	☐	☐	☐
2. Do people frequently ask you to repeat a statement you have made?	☐	☐	☐
3. Do you speak in the same tone continually?	☐	☐	☐
4. Do you speak with the same volume continually?	☐	☐	☐
5. Do you speak in an artificial, unnatural, and affected voice?	☐	☐	☐
6. Is your voice high-pitched and shrill?	☐	☐	☐
7. Do you frequently speak with lungs almost empty?	☐	☐	☐
8. Do you hiss when using certain letters, such as P, B, T, C, and S?	☐	☐	☐
9. Do you speak in mush tones as though you had something in your mouth?	☐	☐	☐
10. Is your voice clouded and husky?	☐	☐	☐
11. Do you talk "through your nose"?	☐	☐	☐
12. Do you talk in a jerky manner?	☐	☐	☐

ASSIGNMENT SHEET #4

	VOICE RATING	**Yes**	**Maybe/ Sometimes**	**No**
13.	Do you talk in a whining and apologetic manner?	☐	☐	☐
14.	Do you talk in a dominating, dictatorial tone?	☐	☐	☐
15.	Do you stammer and stutter?	☐	☐	☐
16.	Do you often speak too fast or in a slow drawl?	☐	☐	☐
17.	Does your voice lose its force and expression at the end of sentences?	☐	☐	☐
18.	Do you speak in a flat, dull, and colorless tone?	☐	☐	☐
19.	Do you jumble up consonants, making your speech hard to understand?	☐	☐	☐
20.	Do you use a "gushy" or "gooey" voice when talking to friends?	☐	☐	☐
21.	Do you choke off sounds?	☐	☐	☐
22.	Is your voice unpleasant when you laugh?	☐	☐	☐
23.	Do you put the "d," "t," and "ing" on the end of words?	☐	☐	☐
24.	Do you run words together?	☐	☐	☐
25.	Do your words flow out evenly and clearly?	☐	☐	☐
26.	Is your voice friendly and cordial?	☐	☐	☐
27.	Can you be heard clearly in the back of the room when speaking?	☐	☐	☐
28.	Do you emphasize your main thought?	☐	☐	☐
29.	Do you use "uh" and "er-uh" and "you know" frequently?	☐	☐	☐

PROFESSIONAL LEADERSHIP DEVELOPMENT
UNIT IV

UNIT OBJECTIVE

After completing this unit, the student should be able to develop skills needed to be an effective leader and member of an organization. The student will show this knowledge by completing assignment sheets and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match terms associated with professional leadership to their correct definitions.
2. Select from a list essentials of a good organization.
3. Select from a list guidelines for conducting a good meeting.
4. List characteristics of a good chairman.
5. Arrange in order steps in developing a presentation.
6. Match principal parts of an outline to their correct descriptions.
7. Select from a list ways to improve the delivery of a presentation.
8. Match abbreviations of vocational student organizations to their correct full names.
9. Select from a list the HOSA motto.
10. Match the symbols in the HOSA emblem to their correct meanings.
11. Label the colors of the official HOSA emblem.
12. Select from a list items in the official HOSA dress code for members.
13. Select from a list benefits of membership in HOSA.
14. Select from a list goals of HOSA.
15. State the organizational levels of HOSA.
16. List types of HOSA chapter activities.
17. Match chapter officers to their duties.
18. Match leadership training activities for HOSA to their correct descriptions.

OBJECTIVE SHEET

19. Select from a list criteria for selection of HOSA voting delegates.
20. Match terms associated with parliamentary procedure to their correct definitions.
21. Select from a list principles upon which parliamentary procedure is based.
22. Arrange in order the proper sequence of business carried out during a HOSA meeting.
23. Match HOSA uses of the gavel to their correct meanings.
24. Match types of motions to their correct descriptions.
25. Arrange in order steps to process a main motion.
26. Match parliamentary motions to their correct purposes.
27. Match the methods of voting to their correct uses.
28. Give a prepared one-minute talk.
29. Give a three-minute speech.
30. Move a main motion and the previous question.

PROFESSIONAL LEADERSHIP DEVELOPMENT
UNIT IV

INFORMATION SHEET

I. Terms associated with professional leadership development

A. **Active member** — Student enrolled in an approved health occupations educational program; must be member of the state organization in order to hold offices on the local, state, and national levels

(NOTE: Active members are in the secondary division, the postsecondary division, or the collegiate division.)

B. **Alumni member** — Former active member who has remained in good standing with the chapter

C. **Gesture** — Facial expression or body motion used to emphasize an idea

D. **Health Occupations Students of America (HOSA)** — Student organization at the national level for students enrolled in health occupations programs

(NOTE: The state organization is known as the Oklahoma Association of HOSA.)

E. **Honorary life member** — Individual who has made contributions to development of HOSA in Oklahoma and whose membership has been approved by the state executive council

(NOTE: Alumni and honorary life members have all rights except serving as voting delegates, holding elective office, or participating in state competitive events.)

F. **Local chapter advisor(s)** — Person(s) designated by local school administration to advise and provide leadership for the local HOSA chapter

G. **Outline** — Logical organization of ideas that forms the framework of any story, essay, or other form of information

H. **Professional member** — Person who may be associated with, or who has participated in, the development of health occupations student organizations in Oklahoma as approved by the state organization

I. **Résumé** — Short account of one's career and qualifications prepared by person applying for a position

J. **State HOSA advisor** — Person appointed by the state supervisor and approved by executive council to advise and provide leadership for the state organization

K. **Voting delegate** — Student chosen to represent local chapter in balloting on questions of business or election of officers at state or national conferences

INFORMATION SHEET

II. Essentials of a good organization

   A. Capable officers and leaders

   B. Responsibility for organizational activities shared by all members

   C. Challenging program of activities

   D. Proper recordkeeping

   E. Well-planned, regularly held meetings

   F. Support from school officials and community leaders

   G. Active member participation in chapter activities

III. Guidelines for conducting good meetings

   A. Have the executive committee plan and practice before the meeting

   (NOTE: It is suggested that an agenda be prepared ahead of time.)

   B. Have the secretary, treasurer, and each committee prepare written and oral reports

   C. Arrange the seating plan so that everyone can see the program

   D. Give the guest speaker some indication of the topic desired and length of the speech

   E. Have an official greeter to make everyone feel welcome and to prevent interruptions of serious portions of the meeting

   EXAMPLE: The greeter may ask members who enter late to wait until after the devotional and flag salute to be seated.

   F. Proceed according to the order of business

   G. Proceed with minimum participation by the advisor(s)

   H. Begin and end on time

   I. Involve all members in at least one committee

   J. Conduct business according to parliamentary procedure

   K. Move the meeting along with "snap" to prevent boredom and wasted time

   L. Have all members express appreciation to guests for their attendance

   M. Organize plan for clean-up duties

INFORMATION SHEET

IV. Characteristics of a good chairman

(NOTE: There is some use currently of the terms *chairperson* and *chairwoman* to recognize that many women hold positions of leadership. However, according to the National Association of Parliamentarians, the terms *chairman* or *madame chairman* will continue to be used to designate the person who is the chair. The term *madame chairman* is appropriate when a female is in the leadership position.)

A. Willingness to work

B. Self-confidence

C. Ability to use parliamentary procedure effectively

D. Ability to make fair and impartial judgments

E. Neat appearance

V. Steps in developing a presentation

(NOTE: There may be a time when you, as a member of an organization, are called upon to make a presentation to a group. It may be a presentation developed to give specific information, or to attempt to influence the group, or just to provide entertainment at a gathering. Learning to give a talk will be easy if you follow an organized method of development.)

A. Choose a topic that is interesting to the audience, making sure that you are knowledgeable of that subject

B. Analyze the subject

(NOTE: Make sure that you know exactly what information you want to give to the group and to what depth.)

C. Research available references

(NOTE: Make copies of journal and text materials; clip them together.)

EXAMPLES: Research personal library, review professional journals, check libraries, check with other professionals for updated information, check with state and federal government agencies.

D. Decide type of presentation

(NOTE: Decide what is the best way to present your information, such as a lecture, a slide show, a dramatization, or a game. Whatever you choose, make arrangements for any equipment you will need for the presentation.)

E. Record key information only

(NOTE: Write information down in a systematic method, using only the key information. Use three-by-five-inch cards or tape-record information.)

F. Arrange material in logical order

(NOTE: Make an outline of material to use in organizing the information.)

INFORMATION SHEET

G. Practice your presentation

(NOTE: Practicing your presentation in front of a mirror will be helpful. Adding appropriate gestures will enhance the presentation and make it more emphatic. Time the presentation if you need to stay within a certain time frame, making sure that you do not overextend your limit. You may want to videotape and critique your presentation.)

VI. Principal parts of an outline

(NOTE: An outline can be used as a checklist to make sure you are covering all the important parts of the presentation.)

A. Introduction — Beginning of a presentation; should attract and motivate audience

(NOTE: An introduction can be a startling statement, a humorous remark, or a motivational quotation. If you use a quotation, make sure that you are stating the exact information and credit the source.)

B. Body — Central theme of presentation; carries main idea

C. Conclusion — Repeats or summarizes the main point of the presentation

VII. Ways to improve the delivery of a presentation (See Figure 1)

(NOTE: Taking the opportunity whenever it is available to speak in public will help you to perfect your skills. HOSA competitive events, both state and national, include speaking events. The more times that you prepare and give a presentation, the better prepared you will be for these competitive events.)

A. Be enthusiastic and confident

B. Be neatly groomed

C. Let all important actions, objects, and aids be seen clearly

(NOTE: If you have audiovisuals of any type, make sure equipment is working and arranged where all of the group can see clearly. It is a good idea to set up the equipment ahead of time and check to see if it is working properly.)

D. Speak clearly and in a pleasant tone of voice

(NOTE: Make sure that you are pronouncing all words correctly and clearly.)

E. Add appropriate gestures to make points

(NOTE: Gestures are made to emphasize specific points, to convey attitudes or moods, or to express feelings and thoughts. Your posture, voice control, hand and facial expressions can be used to add meaning to your delivery.)

F. Make eye contact with your audience

(NOTE: Eye contact makes a presentation a more personal experience for the audience. If you have trouble making eye contact, focus on someone's forehead or nose.)

INFORMATION SHEET

FIGURE 1

VIII. Abbreviations of vocational student organizations

- A. AIASA (American Industrial Arts Student Association)
- B. DECA (Distributive Education Clubs of America)
- C. FBLA (Future Business Leaders of America)
- D. FFA (Future Farmers of America)
- E. FHA-HERO (Future Homemakers of America-Home Economics Related Occupations)
- F. HOSA (Health Occupations Students of America)
- G. VICA (Vocational Industrial Clubs of America)

IX. HOSA motto — "The Hands of HOSA Mold the Health of Tomorrow"

INFORMATION SHEET

X. Symbolism in the HOSA emblem

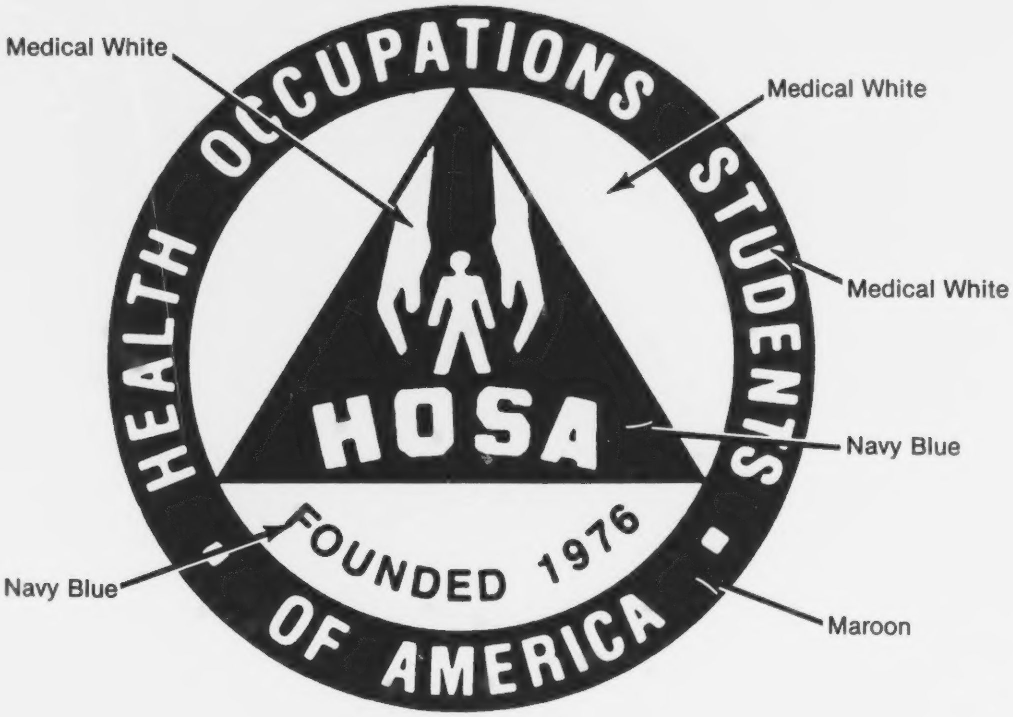
  A. Circle — Continuity of health care

  B. Triangle — Three aspects of humankind's well-being: social, physical, and mental

  C. Hands — The caring of each HOSA member

XI. Official HOSA emblem (Figure 2)

FIGURE 2


Medical White
Medical White
Medical White
Navy Blue
Navy Blue
Maroon
HEALTH OCCUPATIONS STUDENTS OF AMERICA
HOSA
FOUNDED 1976

Used with permission of Health Occupations Students of America.

INFORMATION SHEET

XII. Official HOSA dress code for members (See Figure 3)

A. Navy blazer with official HOSA emblem on left breast pocket

B. Matching navy blue or white slacks or skirt

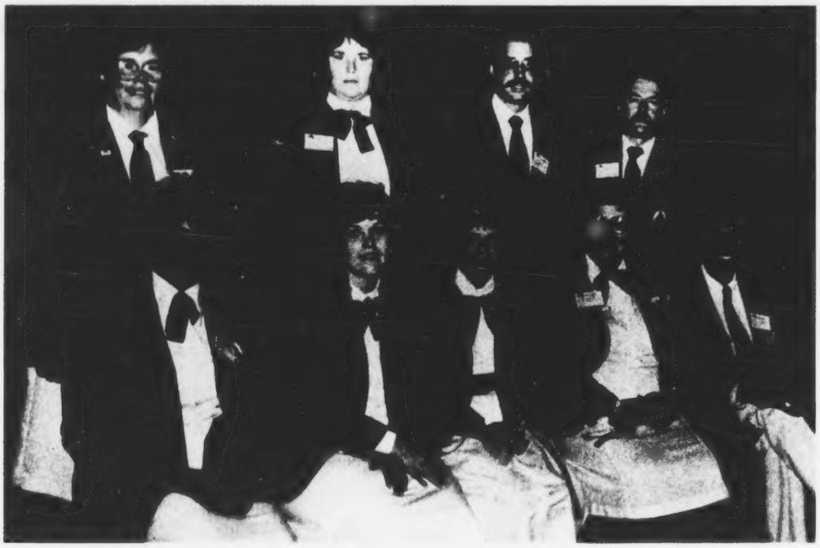
C. White tailored blouse or shirt

D. Navy or maroon tie for men

E. Appropriate shoes

F. Official HOSA pin

FIGURE 3



XIII. Benefits of membership in HOSA

A. Provides guidance to students who seek to develop knowledge, skills, and behavioral characteristics necessary in preparing for a future in a health career

B. Helps students associate and exchange information with other students who have similar interests

C. Helps develop leadership qualities

(NOTE: Leadership skills are necessary for preparing persons to take active roles in professional and civic organizations.)

D. Helps students gain self-confidence through the development of leadership skills and abilities

(NOTE: The person who feels confident in these skills will feel comfortable in the role of a leader.)

INFORMATION SHEET

   E. Introduces students to a wide variety of health career choices

   F. Helps students develop responsibility through service to the local community

   G. Helps students develop interest in being a part of the community and civic affairs

   H. Provides opportunity to make new friends

   I. Helps individuals learn to work with others

   J. Encourages participation in activities other than school courses

XIV. Goals of HOSA

   A. To promote physical, mental, and social well-being

   B. To develop effective leadership qualities and skills

   C. To develop the ability to communicate more effectively with people

   D. To develop character

   E. To develop responsible citizenship traits

   F. To understand the importance of pleasing oneself as well as being of service to others

   G. To build self-confidence and pride in one's work

   H. To make realistic career choices and seek successful employment in the health care field

   I. To develop an understanding of the importance in interacting and cooperating with other students and organizations

   J. To encourage individual and group achievement

   K. To develop an understanding of current health care issues, environmental concerns, and survival needs of the community, the state, the nation, and the world

   L. To encourage involvement in local, state, and national health care and education projects

   Used with permission of Health Occupations Students of America.

XV. Organizational levels of HOSA

   A. Local chapters

   (NOTE: Finances needed to operate the local chapters will depend upon programs planned for the year.)

   B. State association of HOSA

   (NOTE: State organization finances are provided through annual affiliation fees.)

INFORMATION SHEET

C. National HOSA

(NOTE: National organization finances are provided through annual affiliation fees.)

XVI. Types of HOSA chapter activities

(NOTE: Activities promote growth of individual members; improve school, home, and community; and serve as showcase for the local chapter, state, and national organization.)

A. Professional activities

EXAMPLES: Guest speakers, vocational-related films, chapter field trips, special recognition banquets, state and national conferences, and competitive events

B. Civic activities

EXAMPLES: Benefits for March of Dimes, Heart Fund, Community Chest, Red Cross, or other service agencies; booths and exhibits at state fairs; assisting community officials with health fairs

C. Service activities

EXAMPLES: Thanksgiving or Christmas food baskets for people in need; involvement with senior citizen groups

D. Social activities

EXAMPLES: Get-togethers for prospective members, reception for faculty members, and chapter picnics or dinners

E. Fund-raising activities

EXAMPLES: Sales projects, car washes, bake sales, dinners

(NOTE: Local chapters can finance their group through fund-raising events, but these must be approved by the school administration.)

XVII. Chapter officers and their duties

A. President — Presides over all chapter meetings; serves as ex officio member on all committee meetings; coordinates and supervises all efforts of chapter officers and committees

B. Vice-president — Assists the president; presides over chapter activities in the absence of the president; serves as chairman of program committee

C. Secretary — Prepares and reads minutes of all chapter meetings; maintains membership list and record of attendance; answers all chapter correspondence promptly; counts and records all votes; reads all communications at meetings; prepares an agenda for meetings

D. Treasurer — Keeps financial records of the chapter

INFORMATION SHEET

E. Sentinel — Secures and sets up meeting rooms; attends the door during meetings and greets visitors; makes sure meeting room is comfortable; ensures that meetings proceed without outside interruption

F. Parliamentarian — Informs all members on correct parliamentary procedures

G. Reporter — Prepares news releases regarding HOSA activities for all media

H. Historian — Gathers and assembles all materials in preparation for the chapter scrapbook

I. Chaplain — Takes charge of all religious activities during chapter meetings and other functions

J. Member-at-large — Provides continuity to executive council; is alumni member

XVIII. Leadership training activities for HOSA (Table 1)

TABLE 1

Meeting	When	Who	Activity
Vocational Leadership Institute	Summer	State officers of AIASA, DECA, FBLA, FFA, FHA-HERO, HOSA*, VICA	Leadership training
Fall HOSA Leadership Conference	Fall	All members of state association of HOSA	Leadership training for local chapter officers; election of officers for secondary,post-secondary, and collegiate programs
Spring HOSA Leadership Conference	Spring	All members of state association of HOSA	Leadership training for all members; competitive events and leadership/scholarship skills
National HOSA Leadership Conference	Summer	All members of HOSA	Competitive events and leadership/scholarship skills; election of national officers

*Since HOSA does not elect its state officers until fall, each chapter advisor is asked to submit names of potential leaders in HOSA — students who would be members of a HOSA chapter the next year and would be willing to run for office.

INFORMATION SHEET

XIX. Criteria for selection of HOSA voting delegates

(NOTE: Each local chapter is entitled to be represented at the state level by two voting delegates and two alternates, elected by the local chapter. Each state organization is entitled to be represented at the national level by two voting delegates from each division, secondary and post-secondary, with two alternates. The state representatives are elected at the spring leadership conference.)

A. Active participation in all chapter meetings and assigned committees

B. Successful achievement in classroom assignments and laboratory activities while maintaining achievement in other school subjects

XX. Terms associated with parliamentary procedure

A. **Agenda** — List of items to be considered during a meeting

B. **Amend** — To change the wording of a motion

EXAMPLES: By adding to, by striking out, by inserting, by both striking out and inserting, by substituting

C. **Amendment** — Formal statement of revision or change

D. **Debate** — Procedure allowing positive and negative expression on a question or issue

E. **Floor** — Members of the assembly; also the right to speak to the assembly

F. **Majority** — At least one more than half of the legal votes cast

G. **Minutes** — Record of the proceedings at a meeting

H. **Motion** — Proposal that something be done; method of bringing a question before the assembly for consideration

I. **Out-of-order** — Term that indicates incorrect parliamentary procedure

(NOTE: This parliamentary procedure term may be used by the presiding officer whenever a member misuses a parliamentary procedure or whenever excessive noise and disturbance occur during a meeting.)

J. **Parliamentary procedure** — Set of rules for conducting a meeting in an organized and efficient manner

(NOTE: Knowledge of these techniques is essential to leadership development and vital to success of any organization. The official handbook for parliamentary procedure is the newly revised *Robert's Rules of Order*.)

K. **Putting the question** — Taking the votes

INFORMATION SHEET

L. **Quorum** — Number of members needed to be present in order for official business to be transacted

(NOTE: Unless otherwise stated in a chapter constitution, half or more of the active membership constitutes a quorum.)

M. **Second** — To indicate formally one's desire to bring a motion or procedure to discussion or vote

XXI. Principles upon which parliamentary procedure is based

A. Justice and courtesy for all

B. Majority rule

C. Right of the minority to be heard

D. Protection of the rights of the individual

E. Consideration of one item of business at a time

F. Maintenance of order

G. Expedition of business

XXII. Proper sequence of business carried out during a HOSA meeting

A. Opening ceremony

(NOTE: Almost every organization has a particular sequence of events that takes place during the opening and closing of a meeting.)

B. Reading and approval of minutes of previous meeting

C. Committee reports

D. Unfinished business

E. New business

F. Program

G. Closing ceremony

H. Entertainment, recreation, refreshments

XXIII. Uses of the gavel according to HOSA

(NOTE: The procedure for using the gavel in *Robert's Rules of Order* differs slightly from the HOSA use. According to *Robert's*, a single rap of the gavel indicates adjournment of meeting; light raps of the gavel indicate a member is out of order.)

A. Two taps — Call meeting to order

B. Three taps — Signal for all members to stand

C. One tap

INFORMATION SHEET

1. Signal for all members to be seated
2. Signal that a main motion has been passed or rejected
3. Signal for adjournment

D. Sharp tap or series of taps — Maintain order during meetings

(NOTE: A good meeting should have dignity and order. It is the responsibility of the president to maintain complete order. Members should visit outside the meeting. Talking is done only by proper recognition from the president.)

XXIV. Types of motions

A. **Main motion** — Introduces business or brings a question directly before the assembly

(NOTE: A main motion is introduced by saying, "I move. . . ." Only one main motion can be considered at a time.)

EXAMPLE: "I move to purchase a new gavel."

B. **Subsidiary motion** — Modifies or disposes of main motion; must be voted upon before vote is taken on main action

EXAMPLE: Amendment

C. **Privileged motion** — Has no connection with main motion and outranks other motions

EXAMPLES: Fixing time of next meeting, adjourning, calling for question of privilege, or calling for order of the day

D. **Incidental motion** — Arises from or is related to procedure; may or may not refer directly to the main question

EXAMPLES: Nominations and elections, objection to consideration, or points of order

XXV. Steps to process a main motion

A. Obtain the floor

(NOTE: Member must stand and address the chair in order to be assigned the floor.)

EXAMPLE: [*Rises*] MEMBER: Mr./Madam President

B. Assign the floor

(NOTE: If the name of the member is not known by the presiding officer, respond with "Yes" or show recognition by a single nod.)

EXAMPLE: PRESIDING OFFICER: Mr./Mrs. Carter

C. Make the motion

EXAMPLE: MEMBER #1: I move that we provide Thanksgiving food baskets to needy families.

INFORMATION SHEET

D. Second the motion

(NOTE: It is not necessary for the member to rise or wait to be recognized by the presiding officer to second a motion. Seconding a motion signifies that at least two members wish to discuss that item of business. If the presiding officer does not hear a second, he or she may call for a second.)

EXAMPLES: MEMBER #2: I second the motion.

PRESIDING OFFICER: Is the motion seconded?

PRESIDING OFFICER: Without a second, the motion is not before the assembly. [*Pause for response.*] The next order of business is. . . .

E. State the motion

EXAMPLE: PRESIDING OFFICER: It has been moved and seconded that. . . .

F. Discuss/debate

(NOTE: To discuss/debate a question, a member must rise, address the presiding officer, and be assigned the floor. The maker of a motion may not speak against his or her motion, but is entitled to vote against it. No member is allowed to speak more than twice during the same meeting to the same question.)

EXAMPLE: PRESIDING OFFICER: Is there any discussion/debate?

MEMBER: (Begins remarks) I speak for (or against) the motion. . . (closes remarks) AND I urge you to vote for (or against) this motion.

G. Put the question

(NOTE: If there is no response after this step, then the presiding officer restates the motion.)

EXAMPLE: PRESIDING OFFICER: Are you ready for the question?

PRESIDING OFFICER: The question is on the motion to. . . .

[*The presiding officer then takes a vote, both affirmative and negative.*]

H. Announce vote and state action

EXAMPLE: PRESIDING OFFICER: The ayes have it, and the motion is adopted. We will. . . . (The noes have it; the motion is lost. We will not. . . .)

XXVI. Purposes of parliamentary motions

A. Lay on the table — Temporarily delays the consideration of an item of business

(NOTE: The motion "lay on the table" permits members to make further investigations in regard to the question being considered, permits consideration of more urgent buiness, and delays action to motion until the chapter decides to take the motion from the table. If a motion is tabled, all pending amendments and other motions adhering to it are also tabled.)

INFORMATION SHEET

B. Previous question — Stops debate on the motion or motions before the chapter and secures a vote immediately

(NOTE: The previous question applies only to the question immediately pending if unqualified and applies to successive pending questions if qualified. It requires a two-thirds vote in the affirmative. If a main motion and an amendment are pending and the previous question carried, it applies only to the amendment. If the previous question is qualified to include everything before the chapter and is carried, it is necessary to vote at once on the amendment and the main motion in that order.)

EXAMPLE: "I move the previous question." OR "I move the previous question on all pending motions."

C. Refer to committee — Allows a smaller, select group to study the question and report to the chapter its findings of a study or the accomplishment of an assigned task

(NOTE: The motion "refer to committee" allows time for securing more detailed information relevant to the item of business, ensures privacy when considering a delicate matter, secures recommendations from a smaller group, and permits a more informal consideration of a motion.

The motion should state the name of the smaller group if it is a standing committee [or how the charged committee was selected if it is not a standing committee], when the committee needs to report back, and what they are charged to do.)

EXAMPLE: "I move we refer the motion to purchase a HOSA banner to a committee consisting of. . .(or to a special committee on. . .) and will report back. . . ."

D. Amend — Changes the motion or resolution that is being considered to a more satisfactory form

(NOTE: An amendment must be related to the subject of the motion. There are only two kinds of amendments: first degree and second degree. If an amendment applies to the *original motion*, it is a primary or first-degree amendment. If an amendment applies to another *amendment* [an amendment to an amendment], it is a secondary or second-degree amendment. A second-degree amendment cannot be further amended.)

EXAMPLES: The motion "I move to have a HOSA western social" can be changed in four ways:

To amend by adding: "I move to amend the motion by adding the words 'on May 6th.' "

To amend by striking out: "I move to amend the motion by striking out the word 'western.' "

To amend by inserting: "I move to amend the motion by inserting the word HOSA 'appreciation' western social."

To amend by striking out and inserting: "I move to amend the motion by striking out the word 'social' and inserting the word 'dinner.' "

INFORMATION SHEET

E. Postpone indefinitely — Suppresses the question before the assembly without bringing the matter to a vote; if adopted, "postpone indefinitely" kills the motion

(NOTE: If "postpone indefinitely" carries, the main motion is suppressed for the current meeting or convention. Proposal as a new motion at a later meeting is the only way a postponed-indefinitely question can be before the assembly again. Sometimes "postpone indefinitely" is made by opponents of the main motion to learn who is favoring and who is opposing the main motion.)

F. Point of order — Calls attention to a violation of the rules or to a mistake in procedure

EXAMPLE: MEMBER: [*Rising*] Mr./Madame President, I rise to a point of order.

PRESIDING OFFICER: State your point.

MEMBER: The amendment offered is not related to the main motion and is therefore out of order. [*Takes seat.*]

PRESIDING OFFICER: The member's point is well taken. The amendment is out of order. *OR* The point is not well taken. The amendment is in order.

G. Appeal from the decision of the chair — Obtains a decision from the chapter to the question on which the president has just rendered a decision

(NOTE: An appeal from the decision of the chair permits the chapter to review the decisions of the president and is made only in regard to the decision which the president has made. An announcement of a vote or an answer to a parliamentary inquiry is not a decision.)

H. Suspend the rules — Allows a chapter to take action which it is prevented from taking because of certain parliamentary rules, a previously adopted chapter program, or the standing rules of the chapter

(NOTE: Rules may be suspended only for a limited time and only for a limited purpose. To suspend the rules requires a two-thirds majority vote.)

I. Division of the assembly — Secures an accurate vote, especially when the vote has already been taken by voice or by show of hands

(NOTE: Any member has the right to request a division of the assembly. Division of assembly automatically calls for a standing vote or ballot. It must be called for before another motion has been stated.)

EXAMPLE: Any time a vote has been taken by voice or by show of hands, a member, without obtaining recognition, may rise and state the following:

MEMBER: I call for a division. *OR* Division.

PRESIDING OFFICER: A division has been called for. Those supporting the motion that. . . ,please rise. Be seated. Those opposed, please rise. Be seated. The motion. . . .[*Effect is announced.*]

INFORMATION SHEET

J. Nomination — Presents to the chapter the name of a candidate for the office to be filled

(NOTE: A nomination does not require a second.)

K. Parliamentary inquiry — Obtains information from the presiding officer concerning some question related to the pending question and proper procedure

L. Leave to withdraw a motion — Permits the proposer of a motion to remove it from consideration

(NOTE: Leave to withdraw a motion does not require approval of the assembly unless the motion has already been stated by the chair.)

M. Adjourn — Formally closes a chapter meeting

(NOTE: It is a privileged motion when unqualified.)

N. Question of privilege — Permits a member to secure immediate action upon a matter that concerns someone's right and comfort

EXAMPLE: MEMBER: Mr./Madam President, I rise to the question of privilege affecting the assembly.

PRESIDING OFFICER: State your question of privilege.

MEMBER: We cannot hear the speakers. I request that the doors of the hall be closed to shut out the noise.

PRESIDING OFFICER: Your request is granted. Will the ushers please close the doors.

(NOTE: A member may request, but not demand, the granting of the privilege related to such things as ventilation, heating, conduct of officers, or the control of noise.)

O. Request for information — Asks for explanation or additional knowledge relating to the pending business

EXAMPLES: MEMBER: [*Rising*] Mr./Madam President, I rise for information.

PRESIDING OFFICER: You may ask your question.

OR

MEMBER : [*Rising*] Mr./Madam President, I should like to ask the speaker a question.

PRESIDING OFFICER: If the speaker consents, you may ask your question through the chair.

P. Take from the table — Permits further consideration of a tabled motion

INFORMATION SHEET

(NOTE: In order to offer a motion to take from the table, some business must have been transacted since the tabling of the motion. When the motion to take from the table carries, the original motion is before the chapter in exactly the same situation. A tabled motion must be taken from the table at the meeting during which it was tabled or at the next regular meeting.)

Q. Reconsider — Permits the chapter to rescind the vote previously taken on a motion and to consider again the item of business

(NOTE: To move to reconsider, the member must have voted on the prevailing side. Any member may second the motion. Motion must be made on the day the vote was taken or the next calendar day.)

XXVII. Methods of voting

A. Voice vote — Used most often on main motions requiring a simple majority vote

EXAMPLE: Presiding Officer: All those in favor of the motion, say "Aye"; all those opposed, say "No."

B. Rising vote — Used to verify a two-thirds vote or when division of the assembly has been called for

EXAMPLE: Presiding Officer: All those in favor, please stand. Be seated. All those opposed, please stand. Be seated.

C. Show of hands — May be used in small meetings or to establish or affirm a two-thirds majority

D. Ballot — Used when secret voting is needed

EXAMPLE: Election of officers

E. General consent — May be used any time the chair thinks that most members will be in agreement

(NOTE: General consent takes less time than a formal vote and should be used when appropriate.)

EXAMPLE: A member obtains the floor, states a request, and asks for general consent. The chair repeats the request and asks whether there is any objection. If no one objects, the chair proceeds as if the request had been adopted by a formal vote

PROFESSIONAL LEADERSHIP DEVELOPMENT
UNIT IV

ASSIGNMENT SHEET #1 — GIVE A PREPARED ONE-MINUTE TALK

NAME ______________________________ SCORE ______________

One of the best ways to begin preparing to give a presentation is to select a topic with which you are very familiar. Prepare a one-minute talk describing yourself. Time the presentation as you practice the talk. Be prepared to give the talk to your class and be evaluated on your presentation.

PART I

The speaker whom you have contacted for your class meeting will be arriving at the airport. You have never met this person. Describe yourself in detail so that the person will be able to recognize you in the crowd.

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PART II

Give your presentation to the class.

PROFESSIONAL LEADERSHIP DEVELOPMENT
UNIT IV

ASSIGNMENT SHEET #2 — INTRODUCE A SPEAKER

NAME ______________________________ SCORE ______________

As a member of an organization, you may be asked to introduce a guest speaker for a banquet or other type of function. The way you introduce a guest speaker can help or hinder the speaker's presentation.

Using the information given below and the résumé included in this assignment sheet, select a topic for a speaker's presentation; write and then give a one-minute introduction.

Introducing a Guest Speaker

- Set a time limit: Before your introduction, tell your speaker that he or she is to speak for twenty-five minutes and that a five-minute signal will be given before the time is up.
- Review the speaker's résumé; choose information for use in the introduction. Educational and community activities always are appropriate to use.
- Make few remarks. Do not start with the birthdate and relate every event in the résumé. Mention only those past experiences that relate directly to the subject of the speech that the speaker is giving.
- Do not try to capture the audience with your personality. Avoid telling a string of funny stories or giving your knowledge of the subject. Remember, the speaker is the one who will give the presentation.
- Create suspense: Create the thought that what the speaker is about to say is important, and mention the speaker's name only once, at the end of your remarks; then stay on the platform with the speaker and lead the applause. Return to your chair during applause.
- NEVER apologize. If the speaker is a substitute or fill-in due to a program change, do not apologize or make excuses.
- Make sure that you pronounce the speaker's name correctly. Give the speaker's name at the end of the introduction, not at the start.

TOPIC: ____

ASSIGNMENT SHEET #2

Write your introduction in the space below. If more space is needed, use additional paper.

ASSIGNMENT SHEET #2

SAMPLE SPEAKER'S RÉSUMÉ

NAME: Wanda Wolf

EDUCATION: Bachelor of Science in Nursing, 1968
University of Oklahoma

Master of Education in Secondary Education, 1977
Central State University

EXPERIENCE:

Assistant State Supervisor, 1980-present
Oklahoma State Department of Vocational and Technical Education
Stillwater, Oklahoma

Instructor, 1974-80
Health Services Careers
Gordon Cooper Area Vo-Tech School
Shawnee, Oklahoma

Instructor, 1973-74
Associate Degree Nursing Program
Seminole Junior College
Seminole, Oklahoma

Instructor, 1970-73
Health Services Careers and Medical Office Assistant
Canadian Valley Area Vo-Tech School
El Reno, Oklahoma

Office Nurse, 1969-70
Canadian Valley Clinic
El Reno, Oklahoma

Staff Nurse, 1968-69
Parkview Hospital
El Reno, Oklahoma

CERTIFICATES:

Registered Nurse Certificate #0021952
Oklahoma Board of Nurse Registration and Nursing Education

Standard Oklahoma School Certificate
Secondary Health Occupations

Provisional Oklahoma School Certificate
Secondary Administrator

ASSIGNMENT SHEET #2

MEMBERSHIPS:

American Vocational Association
Oklahoma Vocational Association
Oklahoma Health Occupations Education Teacher Association

SPECIAL ACTIVITIES:

HOE Division of OVA
  Vice-President Elect, 1975-76
  Vice-President, 1976-77
  President Elect, 1977-78
  President, 1978-79
  Past President, 1979-80

Participant, Oklahoma Extern Program, 1978

State HOSA Advisor, 1980-present

Outstanding Young Women of America, 1982

Member, Advisory Committee for Teacher Certification,
  Central State University

Curriculum committee member for Health Services Careers

HOSA, Inc. Board of Directors
  Member, 1982-present
  Secretary, 1983-84
  Chairman-Elect, 1985-86
  Chairman, 1986-87

PROFESSIONAL LEADERSHIP DEVELOPMENT
UNIT IV

ASSIGNMENT SHEET #3 — GIVE A DEMONSTRATION

NAME ____ SCORE ________________

Demonstrations are much easier to develop and present than are other types of presentations. However, thorough preparation before giving the demonstration is important.

PART I

Select a topic that interests you and give a demonstration. Use the following work sheet to help you prepare your presentation.

TOPIC: ____

A. What tools and equipment do you need?

1. ____
2. ____
3. ____
4. ____
5. ____
6. ____
7. ____
8. ____
9. ____
10. ____
11. ____
12. ____
13. ____
14. ____
15. ____

ASSIGNMENT SHEET #3

B. What visuals do you need?

1. ______________________________
2. ______________________________
3. ______________________________
4. ______________________________
5. ______________________________
6. ______________________________
7. ______________________________
8. ______________________________
9. ______________________________
10. ______________________________

C. Where will you present the demonstration? ______________________________

(NOTE: Remember, everyone in the room must be able to see your presentation. Always check the room arrangement before giving your presentation.)

D. Having identified your topic and listed the equipment and tools needed, prepare your presentation. Use the following information to assist you.

- Make sure that your topic is current and that you are thoroughly familiar with the content.
- Develop your demonstration.
- Practice your demonstration and revise as necessary.
- Review the time frame; your presentation should not run over fifteen minutes.
- Make sure that the visuals used during your presentation are large enough to be seen by all people in attendance.
- Make sure that all of your tools and equipment are available, in working condition, and clean.
- Check the meeting place several days prior to giving the presentation.
- Make sure that safety procedures are followed while giving the demonstration.

ASSIGNMENT SHEET #3

PART II

This part of the assignment will be used by the instructor or another student to evaluate your demonstration. Read through the evaluation carefully. It will assist you in knowing what points to check before giving your demonstration.

A. What was the length of the presentation? ______________________________

B. Did the demonstration follow a logical sequence? Yes______ No______

C. Did the presenter speak in a clear, distinct tone? Yes______ No______

D. Was the demonstration interesting? Yes______ No______

E. Could the demonstration be seen clearly, and were all visuals used large enough to be seen? Yes______ No______

F. Were proper safety procedures followed? Yes______ No______

If no, what safety procedures were not followed? ______________________________

____

____

____

____

G. Did the presenter have all of the necessary tools and equipment? Yes______ No______

H. What, if any, tools were missing? ______________________________

I. Rate the presenter: Excellent______ Good______ Fair______ Poor______

J. What were the strengths of the presentation? ______________________________

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ASSIGNMENT SHEET #3

K. What were the weaknesses of the presentation? ______________________

L. In what ways could the presentation have been improved? ______________________

PROFESSIONAL LEADERSHIP DEVELOPMENT
UNIT IV

ASSIGNMENT SHEET #4 — GIVE AN ILLUSTRATED TALK

NAME ______________________________ SCORE ______________

You have been asked to give a three-minute illustrated talk. Use interesting and relevant visuals when giving an illustrated talk.

PART I

A. Select a topic that interests you.

TOPIC: ______________________________

B. Determine where the talk will be given. ______________________________

(NOTE: People must be able to see your visuals during the talk. Check the room arrangement before giving your talk.)

C. Select and prepare visuals from the list below. Select types of visuals you will be using and write a brief description of each.

1. Charts ______________________________
   ____
2. Models ______________________________
   ____
3. Posters ______________________________
   ____
4. Photographs ______________________________
   ____
5. Actual objects ______________________________
   ____
6. Transparencies ______________________________
   ____
7. Other ______________________________
   ____

ASSIGNMENT SHEET #4

D. List the equipment you will need.

1. ______________________________
2. ______________________________
3. ______________________________

E. Now that you have selected your topic, have identified where the talk will be given, and have determined the types of visuals you will need, you can start preparing your talk. The following information may be helpful to you.

- Make sure that the topic you selected is timely and that you feel comfortable with the topic.
- Review the time frame; the talk should not run over ten minutes.
- Your visuals are the key to your presentation. Make sure they are large enough to be seen at the back of the room. Colors make your visuals stand out better and illustrate selected points.
- Arrange your visuals according to the points you wish to make.
- Practice your talk several times, paying close attention to your time.
- Handle your visuals skillfully:

  Address the visual and the audience;

  Using a pointer, point to the visual to illustrate specific points;

  Place visual at the back of the stack and continue with your talk.

PART II

This part of the assignment will be used by the instructor or another student to evaluate your illustrated talk. Read through the evaluation carefully. It will assist you in knowing what points to check before giving your talk.

A. What was the length of the talk?______________________________

B. Did the talk hold the attention of the audience? Yes______ No______

C. Did the talk follow a logical sequence? Yes______ No______

D. Could the visuals be clearly seen from the back of the room? Yes______ No______

E. Were the visuals appropriate for the topic? Yes______ No______

ASSIGNMENT SHEET #4

F. Rate the use of visuals:

Overused ☐

Used appropriately ☐

Used very little ☐

G. Did the presenter handle the visuals correctly and skillfully? Yes______ No______

H. Rate the speaker's delivery.

1. Voice

______a. Voice was loud

______b. Voice was soft

______c. Speaker spoke fast

______d. Speaker spoke slowly

______e. Speaker spoke in monotone

Comments: ____

____

2. Stage presence

a. Was the presenter dressed appropriately? Yes______ No______

Comments: ____

____

b. Did the presenter exhibit good poise and body posture? Yes______ No______

Comments: ____

____

c. Was the presenter at ease before the audience? Yes______ No______

Comments: ____

____

ASSIGNMENT SHEET #4

d. Was the talk interesting, understandable, convincing, pleasing? Did it hold the audience's attention?

Comments: ______________________________

____

I. What were the strengths of the talk? ______________________________

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J. What were the weaknesses of the talk? ______________________________

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K. Rate the illustrated talk.

Excellent______ Good______ Fair______ Poor______

L. In what ways could the talk have been improved? ______________________________

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PROFESSIONAL LEADERSHIP DEVELOPMENT
UNIT IV

ASSIGNMENT SHEET #5 — GIVE A THREE-MINUTE SPEECH

NAME ______________________ SCORE __________

You have been asked by a civic club to give a three-minute speech on a current health topic. Select a topic that interests you and would be informative to your audience, and begin collecting related information.

Review all resource material and use an outline form to organize the information. An outline should include an INTRODUCTION to begin the presentation and attract and motivate the audience. Next you would bring the central theme of the presentation that carries your main idea through the BODY of the outline. To close the presentation, a CONCLUSION should repeat or summarize the main point of the presentation or ask for action.

This assignment sheet has four parts that you will need to complete. The first three parts require you to write an introduction, the body, and the conclusion of a three-minute speech. Part IV requires that you give the three-minute speech. Use the spaces below each part to organize and outline your information. Ask the instructor to evaluate your outline before you move on to Part IV. Remember the key word to giving a good presentation is *organization*.

CHOSEN TOPIC: ______________________

RESOURCES USED: ______________________

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PART I — INTRODUCTION

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272-A

ASSIGNMENT SHEET #5

ASSIGNMENT SHEET #5

PART II — BODY

ASSIGNMENT SHEET #5

PART III — CONCLUSION

ASSIGNMENT SHEET #5

PART IV — GIVE A THREE-MINUTE SPEECH

Using the following keys to success in giving a speech, make your presentation in front of the class. Ask for an honest evaluation including strong and weak points.

Know Your Audience

This means more than names. Get as much background as possible before you meet them. Develop a working knowledge of their needs, interests, and experiences and fit your presentation to this knowledge.

Know Your Field

The audience will have confidence in you only as you demonstrate your ability. Keep informed of the latest techniques and knowledge.

Be Prepared

Have a clear, specific purpose for each presentation. Introduce each with a preview. Present your points one at a time and in logical order. Keep related ideas together. Keep language simple and sentences short. When technical terms are used, introduce them gradually and explain each fully.

Control Your Presentation

Set your pace to match the difficulty of the material. Do not be afraid to repeat for emphasis. Use humorous stories or comments to add interest.

Make Your Presentation Effective

When demonstrating, first show the whole operation briefly; then show it one step at a time, explaining as you go along. Emphasize key points. Make full use of instructional aids—models, charts, films, slides, and so on; but use them to improve teaching, not as a substitute for it.

Motivate and Maintain Interest

Show enthusiasm. Use variety in your presentation. Make your speaking personal. Help the audience see future uses of what they learn.

Use Your Voice Wisely

Speak clearly and loudly enough so that all may hear. Speak slowly enough for meanings to be grasped. It is better to cover less and cover it well. A little variation in your voice will avoid monotony. Use eye contact with the audience.

Make Sure of Progress

Establish concrete goals and strive to attain them. Know what you can expect from your audience, and hold them to it. Show genuine interest.

PROFESSIONAL LEADERSHIP DEVELOPMENT
UNIT IV

ASSIGNMENT SHEET #6 — PRESENT OR RECEIVE AN AWARD

NAME ______________________________ SCORE ____________

As a member of an organization, you may be called upon to give or receive a gift or an award. The way in which the gift or award is presented or received can either make the gift or award more meaningful or less meaningful.

Using the information given, be prepared to either present or receive a gift or award.

PART I — PRESENT A GIFT OR AWARD

General Points

- The purpose of a presentation is to recognize the achievement or assistance of an individual or group.
- Tailor your speech to match the occasion or the award. In some instances your speech would be informal; but for an honor, dignity would be the approach.
- Be brief and identify the group making the gift or award. Explain the nature of the award and the reason it is being given.
- Do not give excessive praise or insincere flattery.
- Stress the *honor* of the gift or award, not the value.

The Presentation

- Walk confidently to the platform and place the item on the podium.
- Use good body language, and look directly at the audience. Speak clearly.
- Call the recipient to the platform, and hold up the award so that it is visible to the audience.
- When the recipient reaches the platform, address him or her by name, and present the award.
- After the recipient has given the acceptance speech, you may then be seated.

Write a presentation speech in the space below.

____

____

____

ASSIGNMENT SHEET #6

PART II — ACCEPT A GIFT OR AWARD

General Points

- Make the donors glad you were chosen by thanking them in a modest and sincere way; do not apologize for winning, or state that you are unworthy.
- Thank anyone who assisted you in winning the award.
- State your appreciation for the significance of the award or gift, do not show you are disappointed.
- In conclusion, if your future plans pertain to the award, mention them, and thank the donors again.

Accepting an Award

- Walk confidently to the platform when called.
- Stand close to the presenter, but not in front of the award.
- Hold the award so that all can see it.
- Give your acceptance speech in a clear tone of voice; be friendly, and show enthusiasm for the award.
- Carry the award with pride; show that you value the honor that has been given you.

ASSIGNMENT SHEET #6

Write an acceptance speech in the space below.

PROFESSIONAL LEADERSHIP DEVELOPMENT
UNIT IV

ASSIGNMENT SHEET #7 — RECITE THE NATIONAL HOSA CREED

NAME ______________________ SCORE __________

Read each paragraph carefully and try to memorize it. Then move on to the next paragraph until each one is memorized. Practice saying the creed with a classmate and be able to recite it to the satisfaction of the instructor.

I BELIEVE in the Health Care Profession.

I BELIEVE in the profession for which I am being trained, and in the opportunities which my training offers.

I BELIEVE in education.

I BELIEVE that through education I will be able to make the greatest use of my skills, knowledge, and experience in order to become a contributing member of the health care team and of my community.

I BELIEVE in myself.

I BELIEVE that by using the knowledge and skills of my profession I will become more aware of myself. Through fulfilling these goals, I will become a more responsible citizen.

I BELIEVE that each individual is important in his or her own right; therefore, I will treat each person with respect and love.

To this end, I dedicate my training, my skills and myself to serve others through HEALTH OCCUPATIONS STUDENTS OF AMERICA.

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PROFESSIONAL LEADERSHIP DEVELOPMENT
UNIT IV

ASSIGNMENT SHEET #8 — MOVE A MAIN MOTION AND THE PREVIOUS QUESTION

NAME ______________________________ SCORE ______________

According to stated parliamentary procedures, there are correct ways for using the proper sequences for moving a main motion and the previous question. This assignment sheet allows for role-playing of each procedure. Members should be assigned to role-play the parts, and each member should have an opportunity to play each role.

PART I — MOVING A MAIN MOTION

A. Members should be assigned to role-play the following sequence. During completion of the assignment sheet, each member should have the opportunity to serve as a chairman. This will give each member the opportunity to receive and dispose of an item of business in the form of a main motion.

PRESIDENT: Is there any other business to be presented at this time?

MEMBER 1: [*Rises*]Mr./Madame Chairman.

PRESIDENT: Member 1.

MEMBER 1: I move. . . .

MEMBER 2: [*Rises*]Mr./Madame Chairman, I second the motion.

PRESIDENT: The motion before the chapter is. . . .This motion can be debated and amended. It requires a majority vote. It is now open for discussion. [*Discussion*]

PRESIDENT: Are you ready for the question? Those supporting the motion that. . . ,say 'Aye.' Those opposing, say 'No.' The 'Ayes'/'Noes' have it, and the motion is carried/lost.

[*Rap gavel once.*]

B. After the role-playing is completed, respond to the following situations as if you were president.

1. A member rose, addressed the chair, and made a motion before you recognized him or her. ______________________________

____

____

____

ASSIGNMENT SHEET #8

2. A main motion was properly made but received no second. ____________________

3. You wished to find out whether members were ready to vote on the pending question.

4. You had just completed counting the votes and a member, after obtaining the floor, began discussing the motion just voted on. ____________________

5. A member began debating a motion before you had stated the motion was open for discussion. ____________________

PART II — MOVING THE PREVIOUS QUESTION

A. Members should be assigned to role-play the following sequence. During the completion of the assignment sheet, each member should have opportunity to serve as chairman. This will give each member the opportunity to receive and dispose of the previous question. For the purpose of practice, ask that an item of business be presented in the form of a main motion. During the discussion of this motion, a member may obtain the floor and state:

MEMBER 1: [*Rises*]Mr./Madame Chairman, I move the previous question.

MEMBER 2: [*Rises*]Mr./Madame Chairman, I second the motion.

PRESIDENT: The previous question is called for. This motion cannot be amended or debated and requires a two-thirds vote. Mr./Madame Secretary, will you assist me in counting? Those supporting the motion, please rise. [*Pause to count.*] Be seated. Those opposing the motion, please rise. [*Pause to count.*] Be seated. Mr./Madame Secretary, what was the vote?

ASSIGNMENT SHEET #8

SECRETARY: The vote is affirmative, eight; negative four.

PRESIDENT: There being a two-thirds in the affirmative; the motion is carried. [*Rap the gavel once.*] Therefore, we will vote immediately on the main motion.

(NOTE: If a main motion and an amendment are before the chapter, the previous question may be moved on all pending questions.)

B. What is the purpose of calling for the previous question? ____________________

C. If you were the presiding officer, how would you respond in the following situations?

1. The vote on the previous question was a majority vote but not a two-thirds vote. ____________________

2. A member offered an amendment to the previous question. ____________________

3. No second was offered to the previous question. ____________________

PROFESSIONAL LEADERSHIP DEVELOPMENT
UNIT IV

ASSIGNMENT SHEET #9 — EVALUATE EFFECTIVENESS OF PARLIAMENTARY PROCEDURES

NAME ______________________________ SCORE ______________

Using the chart of rules on the following page, evaluate parliamentary procedures in a meeting on a topic selected by your instructor. Read over the chart of rules, making sure you understand each procedure before beginning the meeting. After the meeting is over, evaluate the effectiveness of the parliamentary procedure by answering the following questions.

A. Outline the order of business for the meeting.

____

____

____

____

____

B. Did the order of business follow the proper sequence? ______________

C. How many people participated in the meeting? ______________

D. How many motions were made? ______________

E. Name the motions made.

____

____

____

____

F. Were any amendments made? ______________

G. Name the amendments made.

____

____

____

____

H. Were the rules on the chart followed concerning the motions and amendments made?

____

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ASSIGNMENT SHEET #9

Rules that apply to motions in conducting a meeting

MOTIONS	MAY INTERRUPT SPEAKER	REQUIRED SECOND	DEBATABLE	VOTE REQUIRED	MOTION THAT MAY APPLY
Privileged					
To fix time	No	Yes	Limited	Maj.	Amend, Reconsider
To adjourn	No	Yes	No	Maj.	None
To take a recess	No	Yes	Limited	Maj.	Amend
Question of privilege	Yes	No	No	Chmn. rules	All
Call for order of day	Yes	No	No	None	None
Incidental					
Point of order	Yes	No	No or Maj.	Chmn. rules	None
Appeal	Yes	Yes	Yes	Maj.	All except amend
Suspend rules	No	Yes	No	2/3	None
Withdraw a motion	No	No	No	Maj.	Reconsider
Parliamentary inquiry	Yes	No	No or Maj.	Chmn. rules	None
Object to consider	Yes	No	No	2/3	All
Call for division of the house	Yes	No	No	Maj.	All
Call for division of question	No	Yes	No	Maj.	All
Subsidiary					
Lay on table	No	Yes	No	Maj.	None
Previous question	No	Yes	No	2/3	Reconsider
Refer to committee	No	Yes	Yes	Maj.	Amend, Recon., Prev. Ques.
Amend	No	Yes	Yes	Maj.	Amend, Recon., Prev. Ques.
Postpone indefinitely	No	Yes	Yes	Maj.	Lim. Deb., Prev. Ques., Recon.

PROFESSIONAL LEADERSHIP DEVELOPMENT
UNIT IV

ASSIGNMENT SHEET #10 — EVALUATE A CHAPTER MEETING

NAME ______________________________ SCORE ______________

The purpose of a chapter meeting is to conduct business. In order for this to happen, the meeting has to be well organized and follow parliamentary procedure. With this in mind, take notes at the next chapter meeting and record your findings below.

A. Did meeting follow the sequence of business as given in information sheet?

____

B. What topics were discussed?

____

____

____

____

C. Was parliamentary procedure followed correctly? ______________

D. How many people were involved in the discussion? ______________

E. Where was meeting held and how many people attended? ______________

____

F. What decisions were made during the meeting?

____

____

____

____

G. Was a guest speaker involved, and what was his or her topic?

____

____

ASSIGNMENT SHEET #10

H. If you made a motion, what type of motion was it?

____

____

I. Was the meeting organized? ______________________________

J. Did the chairman handle the items for discussion well? ______________

CAREER SUCCESS
UNIT V

UNIT OBJECTIVE

After completing this unit, the student should be able to develop skills needed to obtain a job and be successful in a chosen career. The student will show this ability by completing the unit test and assignment sheets with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match to their correct definitions terms associated with career success.
2. List job training sources.
3. State career-related responsibilities of the individual in a health occupation.
4. Select from a list characteristics that employers look for in an employee.
5. Select from a list steps to finding a job.
6. Name sources for locating employment opportunities.
7. Distinguish between private and public employment agencies specializing in health care positions.
8. List guidelines for telephoning for an interview appointment.
9. List steps in preparing for a job interview.
10. List documents needed when applying for a job.
11. Select from a list guidelines for dressing for an interview for a position in a health occupation.
12. Select from a list guidelines for a successful interview.
13. List common observations made by an employer during an interview.
14. List common employee benefits.
15. State ways to increase self-satisfaction in a career.
16. List ways to continue your education in a health occupation.
17. Select from a list major reasons why people lose jobs.

OBJECTIVE SHEET

18. Prepare a résumé.
19. Use a telephone to arrange a job interview.
20. Write a cover/application letter.
21. Complete an employment application form.
22. Participate in a job interview.
23. Write a follow-up letter.
24. Evaluate a job offer.
25. Ask for a raise.
26. Write a letter of resignation.

CAREER SUCCESS
UNIT V

INFORMATION SHEET

I. Terms and definitions

A. **Application form** — Printed form on which job applicant briefly records personal history, job history, job experience, education, and references

B. **Attitude** — Feelings about people, things, and ideas

(NOTE: An attitude can make or break your job. Your role in the health field will put you in contact with many different people in many varied situations and will entail thinking through how you feel and how you will react.)

C. **Blind ad** — Classified advertisement that does not identify the advertiser

(NOTE: The applicant is asked to send a letter or application and a résumé to a box number or to call a certain number.)

EXAMPLE: Medical Lab. Tech. No weekends. Fringe benefits. Box 666, Daily Review.

D. **Blind letter** — Letter of application sent to a company but not to a specific person; usually the letter begins "To Whom It May Concern."

E. **Communication** — Sharing of a message or an idea

F. **Employment agency** — Business designed to help individuals find employment

(NOTE: Private health employment agencies specialize in placing persons in positions such as medical assistant, medical office assistant, or medical office receptionist.)

G. **Employment/situation wanted ad** — Classified advertisement placed by individual seeking employment and indicating job seeker's qualifications

EXAMPLE: LPN—10 years experience in home care.
Call 555-4000 after 3:30 P.M.

H. **Ethics** — Code or standard of behavior; professional conduct

I. **Habit** — Action that is acquired and has become automatic; tendency to perform a certain action

J. **Help wanted ad** — Advertisement telling what kind of job is available and what kind of qualifications are required

EXAMPLE: VETERINARIAN ASSISTANT for emergency clinic. Must be experienced in surgical procedures. Contact Peter Clinic 1:30—3:30 P.M. at 555-5454.

K. **Human relations** — Continuous process of getting along with people

(NOTE: It is of the utmost importance that health workers be able to work with their co-workers and patients and their families.)

INFORMATION SHEET

L. **Job enrichment program** — Activities designed for worker improvement; may be in the form of demonstrations, meetings, or short conferences

(NOTE: Many institutions and organizations hold workshops, institutes, or short courses to bring the health worker up to date on new equipment, new techniques, and present procedures.)

M. **Learning attitude** — On-going alertness for any new knowledge or training

N. **Medical personnel service** — Agency that supplies health care workers to various health care facilities, usually on a temporary basis.

(NOTE: The health care worker is an employee of the agency, not the health care facility.)

O. **Technical knowledge** — Information about a job and skills needed to perform a job

EXAMPLES: An x-ray technician must know how to position patients, how to use x-ray machines and other equipment, and how to process films. A laboratory technician must know how to draw blood, know which tests are to be performed, and know what chemicals and equipment are needed to carry out procedures.

P. **Vita/Résumé/personal data sheet** — Written summary of information about an individual that would be of interest to a prospective employer, or brief autobiographical sketch (Figure 1)

(NOTE: The vita usually lists the individual's major field of study and provides such biographical information as personal data, education, professional experience, and membership in professional and honorary organizations.)

FIGURE 1

VITA

CAROL CODY

PHYSICAL THERAPIST

Major Field	Physical Therapy with emphasis in Gerontology
Personal Data	Born in Smalltown, America, December 12, 1960
Education	Graduated from Progress High School, Progress, America, in May, 1977; completed the Allied Health Careers I & II program at Delta Area Vo-Tech School, May, 1981 & 82. Graduated with BS in Physical Therapy from Atlanta University, Dec., 1986.
Professional Experience	Nurse's aide, Golden Times Care Center; Progress, America, June, 1977, through April, 1980; Part-time physical therapy assistant, Seneca Extended Care Center, May, 1980, to present
Organizations	Health Occupations Students of America, Chapter Vice-President, 1980; Gerontology Care Association, member 1980 to present

INFORMATION SHEET

II. Types of sources for job training

   A. On-the-job training (apprenticeship)

      EXAMPLE: Private practice dentists training their own chairside assistants

      (NOTE: One component of most Allied Health programs is on-the-job training.)

   B. Extension courses

   C. Correspondence and TV courses

   D. Community and junior colleges

   E. Colleges and universities

   F. Area vocational and technical schools

   G. Specialized military training

      (NOTE: The military also offers a pre-service alternative: the military will often furnish funds for your tuition, room, and board while you attend a type of health program before entering military service, with the stipulation that you spend time in the service after completion of that program.)

   H. Career training schools

      EXAMPLES: Private schools that train health care workers such as medical assistants, medical secretaries, bookkeepers, receptionists, dental assistants

III. Career-related responsibilities of the individual in a health occupation

   A. Maintain license or certificate as outlined by board

   B. Follow all guidelines set by the licensing or certifying agency

   C. Uphold standards to provide consistent, safe, quality care

   D. Become a model of professionalism in dress, act, and demeanor

   E. Become an active member in your professional organizations

   F. Keep current in your profession by taking the opportunities available to learn new skills and knowledge

      (NOTE: If you desire to further your education, seek information from schools of higher education. With your basic education and work experience, you may be able to move into advanced levels of education and obtain additional diplomas and degrees.)

INFORMATION SHEET

G. Maintain an open mind at all times by striving to be nonjudgmental

H. Protect yourself in all practices by performing only procedures in which you are skilled

I. Obtain personal liability insurance

J. Document all procedures, equipment used, and client responses

(NOTE: Remember the legal implications of documenting all information accurately and clearly. *Never* be tempted to alter any information! Documentation is also important in justifying the costs of health care as facilities become more accountable for each item and service charged to the client.)

IV. Characteristics that employers look for in an employee

A. Ability to learn institutional procedures and policies

B. Ability to perform work safely and accurately

C. Initiative to take advantage of continuing education opportunities, including the review of professional journals to learn new procedures

D. Dependability to be at work on time whenever scheduled

(NOTE: Dependability is one of the most important characteristics that an employer looks for in an employee. If the employee does not arrive at work when scheduled, client care could suffer. If you must be late, notify your employer as soon as you know. If you are ill, call as early as possible so that someone else can be called.)

E. Knowledge of all skills required for the job and willingness to learn new skills

F. Efficiency in planning work time carefully and using equipment properly

G. Cooperation with all fellow employees

(NOTE: To be a part of an effective health team, you must cooperate with all coworkers. Courteous and respectful behavior toward other staff, clients, and their families is a must. Avoid the temptation to gossip, and respect the confidentiality given to you.)

H. Honesty in all you do and say

(NOTE: If you are not able to perform a procedure or you do not know the answer to every question, do not be afraid to admit that you are not knowledgeable. Employers would rather have you ask for needed help than take chances with limited knowledge.)

INFORMATION SHEET

V. Steps in finding a job

(NOTE: You may not get the first job you want, and that first interview may not be what you expected. Do not be discouraged; look at the experience as a learning situation. Evaluate yourself. Work to strengthen the weak points and polish the strong points.)

A. Write down a complete self-inventory

(NOTE: Consider your abilities, experience, training, personality, desired working conditions, and what you want from life. Also consider your limitations and your need for more training and/or education. You might have to take lesser jobs first to get more experience to qualify for the job level you desire. *Be honest with yourself.*)

B. Make a list of employer possibilities

C. Make a list of possible contacts to help you in your job search

(NOTE: Spread the word that you are looking for a job. The more people who know that you are job hunting, the more leads you are likely to receive.)

D. Prepare for a job interview

(NOTE: Decide on the methods of seeking the job interview. Would a telephone call or a letter be better? Will you need a résumé? Anticipate the types of questions an interviewer would ask. Decide on a method of following up the interview if it is not decisive.)

E. Write a résumé

F. Read help-wanted ads

G. Register with an employment agency

H. Get additional training

VI. Sources for locating employment opportunities

A. Other people

(NOTE: Tell people that you are job hunting. The more people who are aware that you are interested in obtaining a job, the better your chances for locating employment.)

EXAMPLES: Teachers, counselors, ministers or priests, friends, relatives, neighbors, political officials, business people, professionals in the medical field

INFORMATION SHEET

- B. Newspapers

  (NOTE: Use situation-wanted columns, help-wanted ads, general listings by employment agencies, and blind ads.)

- C. Employment agencies
- D. Former employers
- E. Health facility personnel offices
- F. School placement services
- G. Professional journals and newsletters
- H. Medical personnel service

VII. Employment agencies specializing in health care positions

- A. Private agencies

  (NOTE: As the emphasis on home health care increases, more health care givers will be needed to provide those types of services. Various private agencies specializing in health care are available, and they offer good benefits for those who need and enjoy this type of work. Hospitals also draw from private agencies when they need additional staff.)

  1. May charge a placement fee for services

     (NOTE: Private agencies may require a fee from either the prospective employer or the individual seeking employment.)

  2. Require a signed contract between employee and employer
  3. Are usually licensed and bonded
  4. Are controlled by state laws
  5. Have specific minimum requirements

     EXAMPLES: One year of experience as a licensed practical nurse, valid Social Security number, a thorough physical examination including a T.B. test

- B. Public agencies

  EXAMPLES: University placement centers, state employment agencies

  1. Do not charge placement fee for services
  2. Are supported by state or federal government funds

INFORMATION SHEET

3. Are controlled by state laws

4. Give helpful aptitude tests and counseling if needed

VIII. Guidelines for telephoning for an interview appointment

A. Plan in advance what you want to say

B. Call during regular business hours

C. State your name clearly; spell it if necessary

D. Speak confidently, clearly, and distinctly

E. Be courteous and businesslike

F. Request a personal interview; make sure to state which job you wish to apply for

G. Be certain of the time and place of the appointment, and write down the pertinent information

EXAMPLE: Address of employer

H. Ask what documents you should bring to the interview

EXAMPLES: Social Security card, temporary work permit, license

I. Ask who will be conducting the interview so that you can address the interviewer(s) by name and use appropriate title(s)

J. Make the conversation brief and to the point; thank the person for the appointment

IX. Steps in preparing for a job interview

A. Learn what you can about the institution or office

EXAMPLES: Types of clients treated, salary scale, hours of work, job tasks

B. Find out who will be interviewing you so that you can address them by names and appropriate titles

C. Know what you have to offer

EXAMPLES: Education and training, work experience, abilities, work preferences, limitations

INFORMATION SHEET

D. Know why you want to work for the institution or office

(NOTE: Be able to tell about your education, experience, and interest in the health area, and be prepared to explain any special preparation you have had for that job.)

E. Assemble necessary papers

EXAMPLES: Personal data sheet, work record, references, Social Security card, temporary work permit, license

F. Contact people you would like to use as references for permission to do so

(NOTE: Contact former employers, teachers, or someone who can vouch for your character. Avoid asking relatives unless you have actually worked for them on a salaried basis.)

G. Make extra copies of your résumé

(NOTE: There may be more than one interviewer.)

H. Gather information and an appropriate pen to fill out an employment application form

EXAMPLES: Address and telephone number for each of your references; pen with black ink

I. Get a good night's rest the night before the interview

X. Documents needed when applying for a job

A. Personal data sheet, résumé, or vita

B. Letter of application

C. Evidence of education

EXAMPLES: High school diploma or GED certificate, LPN license or temporary work permit, completion certificate from Allied Health Careers program, and any other certificates you have received

(NOTE: Many people will not accept a hand-carried transcript, so be prepared to request your school to mail one.)

INFORMATION SHEET

XI. Guidelines for dressing for an interview

A. Dress appropriately for the type of job you are seeking

(NOTE: Usually, you should not wear a uniform when seeking employment, but do dress neatly.)

B. Coordinate clothing

(NOTE: Consider colors, patterns, and fabrics suitable for the shape of your face and your build.)

C. Be conservative and modest

(NOTE: In most cases, avoid high-fashion items and faddish styles. Avoid wearing unusual shoes, gaudy jewelry, sunglasses, see-through clothing, shorts, very short skirts, and jeans.)

D. Be well-groomed

(NOTE: Health workers should look very clean and neat. Hair needs to be simple, clean, and pulled back away from the face. Avoid bright or heavy makeup and strong cologne or aftershave. Nails should be clean and moderately short. If a dress code is not mentioned during the interview, ask what type of uniform is required and what the rules are for cologne and jewelry.)

XII. Guidelines for a successful interview

A. Dress appropriately

(NOTE: You have only one chance to make a good first impression.)

B. Arrive early

C. Tell the receptionist or secretary your name, whom you are to see, why you are there, and the time of your appointment

D. Be courteous and friendly to the receptionist and all others in the office

(NOTE: The employer might ask the receptionist for an opinion of the applicant.)

E. Greet the interviewer(s) by name and use appropriate title(s); state your name and the job for which you are applying

EXAMPLE: "Good morning, Mrs. Martinique. I'm Jan Meadows, and I am here to apply for the 3 to 11 nursing assistant position in pediatrics."

F. Remain standing until invited to be seated

G. Use good posture

H. Do not chew gum or tobacco

INFORMATION SHEET

- I. Do not smoke
- J. Speak freely, distinctly, and to the point
- K. Answer questions directly and truthfully
- L. Focus attention on your strong points; admit limitations honestly
- M. Listen attentively
- N. Act enthusiastic about the position
- O. Maintain good eye contact
- P. Maintain a composed, calm manner
- Q. Use tact in asking for information that has been overlooked

  EXAMPLES: Salary differentials, floating to other units, promotions

- R. Recognize when the interview is over; thank the interviewer(s), reemphasize your interest in the position, and leave courteously
- S. Write a follow-up letter thanking the employer for the interview

XIII. Common categories of observations made by an employer during an interview

- A. General appearance

  EXAMPLES: Personal appearance and grooming, general health condition

- B. Manners and personality

  EXAMPLES: Level of maturity, friendliness and sense of humor, poise, initiative, enthusiasm, confidence, honesty and sincerity, overall attitude

- C. Self-expression

  EXAMPLES: Ability to think and speak clearly; speaking voice, including diction and grammar; ability to ask intelligent questions and respond to questions

- D. Past work experience

  EXAMPLES: Previous occupations, salary levels, reason for leaving last employment

- E. Education and personal preparation

  EXAMPLES: Interest in job requirements, willingness to accept responsibility, desire to continue education

INFORMATION SHEET

F. Personal interests and activities

(NOTE: This area may not be covered in the interview; however, some employers ask questions of this nature to put the applicant at ease or to find out something about the applicant's nonprofessional activities.)

EXAMPLES: Interest in community activities, awareness of current events, recreational and cultural interests

XIV. Common employee benefits

A. Hospitalization and life insurance for the employee

B. Paid time off for vacations, holidays, coffee or rest breaks, sick leave

C. Opportunity to belong to a credit union

D. Merit pay

E. Retirement plan

F. Savings bonds

G. Tax-sheltered annuities

H. Dental insurance

I. Liability insurance

(NOTE: Liability insurance is a policy that covers a health care worker in case of accident or injury to person receiving care. All health care workers should have liability insurance to cover them as they work with clients. Many facilities and professional people carry liability insurance to cover their employees. Health workers may purchase special policies through professional organizations and insurance companies.)

EXAMPLE: Client slips and falls in a treatment room and later charges the nurse assistant with negligence. If negligence is proven, liability insurance will cover the sum asked for up to the amount of the policy.

J. Subsidized cafeteria

K. Medications and treatment at a discount

L. Preemployment physical

M. Continuing education programs

N. Parking lot spaces

INFORMATION SHEET

O. Shift differential pay

(NOTE: This pay will be additional sum for those persons working evenings or night shifts.)

P. Unemployment compensation or insurance

(NOTE: Businesses that employ a certain number of workers must contribute a small percentage of the total payroll to the federal and state governments. This percentage supports a program whereby covered employees receive a certain amount of money during each week of unemployment.)

Q. Worker's compensation

(NOTE: This health insurance program provides medical benefits to employees who are injured on the job or become ill as a direct result of their working conditions. Employers are required to provide pay for this insurance in most states.)

R. Uniforms

(NOTE: Articles of clothing such as scrub dresses or suits, caps, masks and laboratory coats may be supplied by the institution.)

XV. Ways to increase self-satisfaction in a career

A. Have a positive attitude

B. Be enthusiastic

C. Keep an open mind

(NOTE: Try to learn something new each day. In the health field, new equipment and new techniques are being tried each day. You can be the most up-to-date worker in your facility if you will be receptive.)

D. Read journals, newsletters, and textbooks available that pertain to your profession

E. Join and be active in your professional organizations

F. Volunteer to attend any workshops or in-service programs that your institution might offer

(NOTE: The more you know about your job and your profession, the happier you will be. If you want to further your education and training, set realistic goals and work to attain them.)

INFORMATION SHEET

XVI. Ways to continue your education in a health occupation

A. Attend in-service programs

EXAMPLES: New equipment updates, hospital programs, professional organizations

B. Take courses at junior colleges or universities

C. Take courses offered by professional organizations

D. Take adult education courses in vocational and technical schools

E. Take home-study courses

XVII. Major reasons why people lose jobs

A. Poor human relations and attitude

(NOTE: The biggest factor in keeping your job is how you conduct yourself with the health team and the clients and their families. If you are not a "people person" you may want to look for an occupation that does not demand working with the public.)

B. Low dedication to work ethic

EXAMPLES: Continual tardiness, calling in sick at the last moment or not at all, poor grooming habits, dishonesty in work, disloyalty to place of employment, carelessness

(NOTE: Employers and the people you care for deserve your very best. You should strive to do your best and give the care and concern that you would want to receive. In return, you have the right to work in an atmosphere of appreciation for your efforts and one in which you are able to learn and grow in your profession.)

C. Lack of technical knowledge

(NOTE: Lack of technical knowledge or low ability in executing skills required in a particular job can cost you your job. Look at all available opportunities to learn needed skills or to brush up on learned skills in which you feel weak.)

D. Chemical abuse

(NOTE: Poor human relations, poor attitude, and low dedication to the work ethic may stem from chemical abuse. Chemical abuse is the major reason medical or nursing licenses are revoked.)

CAREER SUCCESS
UNIT V

ASSIGNMENT SHEET #1 — PREPARE A RÉSUMÉ

NAME ______________________________ SCORE ____________

Your résumé represents *you* on paper. A résumé provides your prospective employer with a first impression of you and may be the factor that determines whether or not you will get an interview. A good résumé should immediately give prospective employers a brief summary of your accomplishments, educational background, work experience, skills, and job objective. In short, what can you do for them?

Using the following information, write a résumé to be included with your letter of application. Develop your résumé to respond to a particular ad in a newspaper.

A. Inspect several résumé formats and choose one that best fits your needs, or use the example on the following page as a guide.

B. Type your résumé on 8 1/2-by-11-inch white paper. Try not to exceed one page, but try to fill the page.

C. Use parallel constructions to ensure a consistent writing style.

D. Phrase your résumé concisely, but avoid using abbreviations.

E. Spell correctly. Many employers will not consider persons whose résumé contains misspelled words.

F. Put your name prominently at the top in the center or upper left-hand corner. Beneath your name, give your full street address, city, state, zip code, telephone number with area code, and a number where messages can be accepted.

   (NOTE: If you are applying for positions out of town, add a local phone number and address where you can be reached and the dates you will be there.)

G. Do not include birthplace, age, health, height, weight, sex, marital status, photo, salary, or reasons for leaving a job. Avoid mentioning religious and political affiliations.

   (NOTE: The whole point of the résumé is to interest employers in meeting you in person. The above information may or may not be requested during the interview, but by not including this information, there is little chance of discrimination. However, if you feel that you would benefit by adding any of the above information, you may do so.)

H. Describe your job objective or career goal briefly. Do not restrict yourself to a specific job unless you are quite experienced.

I. Describe your educational background, giving dates of enrollment, diplomas or degrees received, and names of schools attended. Include grade average (if favorable) and major course of study. If you include school grades, be sure that they are related to the jobs you have in mind. If related, mention additional or graduate courses, scholarships, and summer school courses or workshops.

ASSIGNMENT SHEET #1

(NOTE: Applicants with less than one year of work experience should list education before work experience; with more than one year, put experience first. In résumé writing, accent the positive.)

J. List your past employment, starting with the most recent job. Carefully examine all the jobs you have done, including extracurricular activities. *Concentrate on the skills*: Do not categorize "summer jobs."

(NOTE: The list should include the name of the company, your job title, and your major duties and responsibilities. The starting and termination dates for each job should be listed. Most employers ask during interviews why you left previous jobs. Try to be positive in stating your reasons for leaving a former job. Avoid downgrading your previous employers.)

K. List skills useful to the job. Remember, you have to prove your value, especially if you have little experience.

(NOTE: Use active verbs to indicate the specific tasks you performed, initiated, directed, or planned.)

EXAMPLE: Set up and conducted patient education programs.

L. Include the following information if it is relevant and if there is enough space: hobbies and interests, extracurricular activities, clubs, honors you have received.

M. List or be ready to list at least three persons whom you have asked to give you a positive recommendation.

(NOTE: Be prepared to have a completed list of names, addresses, and telephone numbers of references in advance of the interview. Be sure that you have received permission from these persons and that they will give you a recommendation. Use business references, teachers, and character references. Avoid listing relatives unless you have actually worked for them on a salaried basis.)

N. Write CONFIDENTIAL at the top of the résumé to alert the reader if you do not want your current employer to know you are looking for another job.

(NOTE: Try to give a telephone number where you can receive confidential calls.)

O. Have local printer retype your résumé and reproduce several copies. Request white bond paper.

(NOTE: The physical appearance of your résumé is *very important*. Avoid using ditto or carbon copies. Be sure to proofread the printer's work. Always bring extra copies of the résumé to the interview.)

ASSIGNMENT SHEET #1

EXAMPLE OF A RÉSUMÉ

CONFIDENTIAL

Jan Michaels

Address	Present	Permanent
	127 E. Beacon Your town, Your state Zip code (301) 567-2898	Same
Job Objective	Career as dental hygienist	
Education	Yourtown High School, Yourtown, Your State, 1982-1986	
	Progress Vocational School, Yourtown, Your State, 1987	
	Certificate: Dental Assistant	
	Grade average: 3.6 on a 4.0 scale	
Work Experience	Mercy Clinic, Yourtown, Your State. May 1986-August 1987. Duties included making appointments, typing records, greeting patients.	
	Classy Cafe, Yourtown, Your State. June 1984-April 1986. Duties included recording customer orders, operating cash register, and ordering supplies.	
Special Skills	Type 60 words per minute, operate cash register, type from a dictaphone, file records, and update information.	
School Activities	High school orchestra, Glee Club, President of Pep Club, Secretary of 1987 Dental Assistant Class, HOSA	
References	References will be furnished by letter upon request.	

(NOTE: For this type of reference procedure, be sure to have a completed list of names, addresses, and phone numbers of references in advance of interview.)

CAREER SUCCESS
UNIT V

ASSIGNMENT SHEET #2 — USE A TELEPHONE TO ARRANGE A JOB INTERVIEW

NAME ______________________________ SCORE ______________

Making an appointment by telephone accomplishes two things. First, it shows that you are interested in saving the employer's time. Second, it shows that you are thoughtful enough to ask for the best time for the employer to see you.

Use the guidelines below to role-play a situation in which you make an appointment by telephone. After you have completed the role-play, use the checklist on the following page to check your performance.

Follow these steps in making an appointment by telephone:

- Plan what you are going to say before you call.

  (NOTE: Outline in writing, if necessary, the main points you wish to cover.)

- State your name and reason for calling

  EXAMPLE: "Hello, this is Marion Moss, and I'm calling about your ad in the Sometown *Daily News* for a medical assistant. I would like to make an appointment for an interview."

- Ask when would be the best time for you to come for the interview.
- Record the day, time, and place of the interview and the name of the interviewer.
- Thank the receptionist.

Remember these things when calling for an appointment:

- Keep the receptionist on your side. The receptionist is there to help you.

  (NOTE: The receptionist is sometimes asked to evaluate applicants.)

- Do not ask over the telephone how much the job pays.
- Be polite and courteous. Remember that this call is the first contact you may have with the firm. Make that first impression a good one.

ASSIGNMENT SHEET #2

Checklist for making an appointment by telephone

	Yes	No
A. Was prepared before calling	☐	☐
B. Did not have to stammer to find the right words	☐	☐
C. Identified myself	☐	☐
D. Immediately stated reasons for calling	☐	☐
E. Asked the best time for an appointment with the employer	☐	☐
F. Was courteous and friendly	☐	☐
G. Thanked the receptionist	☐	☐
H. Made record of the interview date, hour, and place and recorded the name of the interviewer	☐	☐

CAREER SUCCESS
UNIT V

ASSIGNMENT SHEET #3 — WRITE A COVER/APPLICATION LETTER

NAME ________________________________ SCORE ____________

The cover/application letter is a sales technique to tell the employer how your abilities will be useful to the company. The letter should specify your qualifications while the résumé gives general background information.

Answer one of the ads at the end of this assignment or select one from your local paper. Write a cover/application letter to accompany the résumé you prepared in Assignment Sheet #1. Use the following information and the sample letters as guides.

Form and appearance

- Type or write neatly in black ink.
- Write on only one side of the paper.
- Avoid smudges and typographical errors.
- Use 8 1/2-by-11-inch white bond paper, not personal or fancy paper.
- Spell, capitalize, and punctuate correctly.
- Include your full name, permanent address with zip code, and the correct date on the letter.
- Put employer's full name, title, and address on letter.

Content

- Write to a specific person.

  (NOTE: Find out the name of the executive/personnel manager/employer you want to reach and that person's correct title. When in doubt, write to the top person, who can refer your résumé to the right person. Use *To Whom It May Concern* if answering a blind ad.)

- Attract reader's attention in opening paragraph.

  EXAMPLES: Dear Employer:

  My experience in office management would be of interest to you.

  ____

  Dear Employer:

  Have you wished you had an assistant who has experience in making orthodontic appliances and assisting dental procedures? I might be the one.

  ____

ASSIGNMENT SHEET #3

Dear Employer:

_____________ has informed me that you are in need of a person who can type quickly without errors, make appointments, and assist with treatments efficiently. I believe my experience in the medical office assistance program has taught me to handle these tasks in an appropriate manner.

- State the position for which you are applying.
- State reason for interest in job.

  (NOTE: Employers look for people who look for future advancement opportunities rather than just a paycheck.)

- Cover all points requested in the advertisement in exactly the order in which they appeared.

  (NOTE: Some prospective employers make it a point of testing the applicant's ability to follow directions.)

- Be brief: avoid needless details: and refer only briefly to the main points in the attached résumé, not repeating information already in the résumé.
- Mention that persons listed on the résumé have given their permission to serve as references.
- Request an interview at employer's convenience; tell where you can be reached, and indicate that you will telephone the next week to arrange for an interview.
- End the letter appropriately.

  EXAMPLES: "Sincerely yours"

  "Very truly yours"

- Handwrite your signature in black ink.
- Staple letter to résumé.

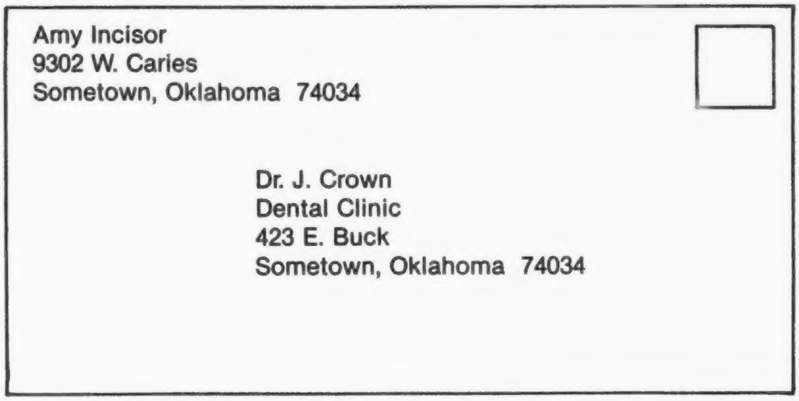
  (NOTE: Your letter and résumé may be circulated to several departments. The letter and résumé may become separated if not stapled together.)

ASSIGNMENT SHEET #3

Envelope

- Address a legal-sized envelope.

(NOTE: Be sure to type the address *exactly* the same as the inside address of the letter.)

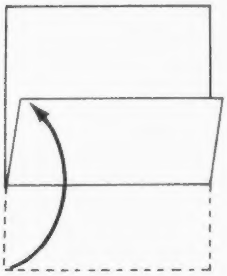


Amy Incisor
9302 W. Caries
Sometown, Oklahoma 74034

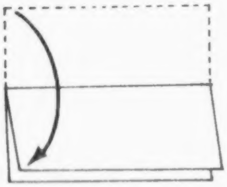
Dr. J. Crown
Dental Clinic
423 E. Buck
Sometown, Oklahoma 74034

- Fold letter and attached résumé.

1. Fold slightly less than one-third of the letter toward the top.

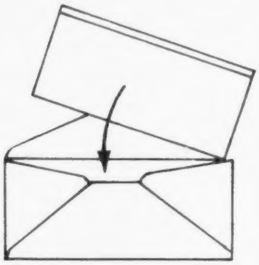


2. Fold down the top of the letter to within 1 cm (1/2 inch) of the bottom fold.



ASSIGNMENT SHEET #3

- Insert a self-addressed envelope inside the folded letter.
- Insert the letter of application, the résumé, and the self-addressed envelope inside the envelope with the first crease toward the bottom of the envelope.



Follow-up

- Follow up by telephone a week later to request an appointment.

  (NOTE: Do not be surprised if the résumé has been referred to another department. You may not get immediate attention, especially if you sent a blind letter; remember that they are in business. When you do reach the right person, ask for a convenient date for an interview.)

- Keep in touch regarding possible openings now and in the future.

  (NOTE: The job hunt may take several weeks or even months. It is important to keep your contacts alive without being a nuisance. There is no one "best time" to look for a job. The "best time" is when you and the jobs are available.)

PART I

A. What are examples of poor form in the first application letter at the end of this assignment?

____

____

____

____

B. How did the second letter improve?

____

____

____

____

PART II On a separate piece of paper, write your own cover/application letter.

ASSIGNMENT SHEET #3

Dr. J. Crown
423 E. Buck
Dental Clinic
Sometown, Oklahoma
74034

Dr. Crown,

I am looking for a job in a dental office and I saw your add in the paper.

I have worked before so I have some experience.

I that I would enroll in the night school of dental assisting soon.

I hope to hear from you soon.

Your friend,
Amy Incesor

ASSIGNMENT SHEET #3

9302 W. Caries
Sometown, Oklahoma 74034
August 9, 1987

Dr. J. Crown
Dental Clinic
423 E. Buck
Sometown, Oklahoma 74032

Dear Dr. Crown:

Please consider this letter an application for the position of dental assistant for which you have advertised in the Sometown *Daily News.*

After graduating from high school, I worked part-time at the Regency Employment Agency as a clerk typist and receptionist. I took basic courses in high school in typing and bookkeeping and enjoy working with people. I would like to enter the health field and have chosen the dental profession.

I would like to enroll in the Sometown School of Dental Assisting evening program that begins August 25, 1988.

I would appreciate the opportunity to come in and talk over this matter with you at your convenience. You may reach me at the above address or by telephone at 372-5040.

Sincerely yours,

Amy Incisor

Amy Incisor

Enclosure

ASSIGNMENT SHEET #3

Nursing
Assistants

We are in need of nursing assistants to work 2nd and 3rd shift. Must have certificate of training and own transportation

DAILY PAY

Malpractice insurance
Worker's Compensation
Uniform Allowance

HEALTH WORKERS
555-5540

DOCTOR's SEC'Y

Fee pd. New Dr. seeks exp. med. transcriptionist. Billie, 555-8930. Clark Personnel

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UNIT CLERKS
ORDERLIES
NURSE ASST'S

Immediate openings on all three shifts for exper. help. Must have work ref. from a hospital or nursing home. Exc. benefits and salary commensurate with experience. Please bring Social Security Card. Contact Personnel Office:

Fountain of Youth Hospital
10002 N. Grant
Equal Opp. Emp. M/F/H

MEDICAL ASSISTANT
for
Internal Medicine Group
8:00-2:30
NO SMOKING PLEASE
555-6702 — Ext.25

Nurse's Aides & Medication Aides needed all shifts. Apply Southern Pines, 246 S. 38, Ph. 555-0286.

Mortuary assistant. Must be able to deal with public. Good working conditions. No experience necessary. Salary negotiable. Apply in person to Mytown Funeral Home, 337 Your Street.

DENTAL ASSISTANT

Thriving dental practice needs enthusiastic dental assistant to work in reception area and assist chairside. Experience preferred, but will consider vo-tech training. Knowledge of dental procedures a must. Send resume to P.O. Box 20, Anytown, Oklahoma 22222.

Musclebound Health Spa needs assistant with knowledge of exercise regimes, nutrition, and basic wellness concepts. Call 555-5577.

VET ASSISTANT

Local vet seeks full-time asst. who is dependable and loves animals. Must be willing to work outside, take calls. Experience preferred. Mail applications to P.O. Box 105.

Clinic Aide. Capable of driving van. 555-9374

Medical Asst. Experience necessary. Apply Personnel Office, Goodcity Clinic, 420 NW 60.

Medical Transcriptionist. Exp. necessary. Apply at Dr. Gannon Clinic, 423 E. Attractive Ave.

MEDICAL CARE, INC.

RNs, LPNs, Nurse Assistants, Orderlies. Part-time or full-time work available. 555-5450.

CAREER SUCCESS
UNIT V

ASSIGNMENT SHEET #4 — COMPLETE EMPLOYMENT APPLICATION FORM

NAME ________________________________ SCORE ______________

Complete the following application form, using the guidelines below. Use information corresponding to the classified ad and to your letter of application. Use information about yourself from your résumé.

(NOTE: Although each facility uses its own form, general rules of preparation apply to any form.)

- Be prepared.
  1. Take pen and pencil with you.
  2. Take copies of your résumé.
- Look over entire form before starting to write; do not hurry.
- Follow directions.
  1. Note whether information is to be printed or handwritten.
  2. Carry out all directions.
- Write clearly, neatly, and legibly.
- Answer briefly.
- Be honest.
- Answer all questions and fill in all blanks.

  (NOTE: If questions do not apply to you, write "NOT APPLICABLE" or "NA" in the space to show that you did not overlook the question.)
- Include complete information; use résumé.
- RECHECK application when finished.
- Avoid cross-outs and obvious erasure marks.
- Do not list any restrictions to the geographic area in which you would work unless you would absolutely not consider other geographic areas.
- Use the word "OPEN" for questions about minimum salary since most employers pay standardized rates and will not negotiate on this.

ASSIGNMENT SHEET #4

NIGHTINGALE MEMORIAL HOSPITAL
"An Equal Opportunity Employer"
2825 Greenlawn Drive
Somewhere, Oklahoma 14326

APPLICATION FOR EMPLOYMENT
(Please type or print)

Thank you for your interest in employment at Nightingale Memorial Hospital. We are an equal opportunity employer and comply with the letter and the spirit of federal and state laws that prohibit discrimination based on race, color, creed, age, sex, national origin, or qualified handicap. We assure you that your application will be treated fairly and confidentially.

Date of Application____________

Name______________________________

Telephone Number____________ Social Security Number____________

Have you ever been employed at Nightingale Memorial Hospital?____________

Job Interest

Position Applying for________________________

Full-Time________ Part-Time________ Shift Preference________

Education and Training

High School
Name________________ City/State________________

Did you graduate?____________ Receive G.E.D.?____________

College, University, Nursing School
Name________________ City/State________________

Registration (If Applicable)

List where you are currently registered

Registration/License________________________
Certification Number Annual Number

City/State________________ Expiration Date____________

Emergency Notification

Name______________________________

Address________________ City/State/Zip____________

Telephone Number (Home)____________ (Business)____________

Special Skills

List office machines you can operate________________________

Can you operate a transcriber?________ 10 key?________ Typing Speed________

Are you familiar with medical terminology?____________ Shorthand Speed________

AHC - 363-A

ASSIGNMENT SHEET #4

Employment History

List your last three places of employment

Present or Last Employer____________________ Position Held__________

Address____________________ City/State/Zip__________

Employed from______ to______ Salary______ Supervisor__________

Reason for Leaving____________________

Employer____________________ Position Held__________

Address____________________ City/State/Zip__________

Employed from______ to______ Salary______ Supervisor__________

Reason for Leaving____________________

Employer____________________ Position Held__________

Address____________________ City/State/Zip__________

Employed from______ to______ Salary______ Supervisor__________

Reason for Leaving____________________

Military Service (If Applicable)

Branch____________________ Service Dates: From________ to________

Primary Duties________________ In Reserves?____________

Personal Background

Do you have any relatives employed at Nightingale Memorial Hospital?____________

Do you foresee any problem (medical or other) that will cause your being absent from work on a regular basis?

____

Recruitment Data

What prompted you to apply for employment at Nightingale Memorial Hospital?

Advertisement______ Career Day______ School______ Employment Agency______

Relative/Friend______ Employee______ Just Walked In______

Please Read Carefully

I certify that the answers given in this application are complete and true and I authorize Nightingale Memorial Hospital to investigate any or all statements made herein. I realize the falsification or omission of any information in this application or during any interview may be cause for immediate rejection or dismissal.

I agree to conform to the Hospital's rules and regulations and will permit medical examinations by the Hospital's physician upon request. I also agree that as a condition of my employment I may be transferred to another department or shift if required by staffing or census levels.

____________________ __________
Signature of Applicant Date

CAREER SUCCESS
UNIT V

ASSIGNMENT SHEET #5 — PARTICIPATE IN A JOB INTERVIEW

NAME ________________________ SCORE ____________

Now that you are prepared for an interview, team up with another student in class. Assume the roles of interviewer and applicant and then switch so that each of you gets to play both roles. Apply for the job you now have or for the one for which you wrote the letter of application. Let your classmates evaluate your performance, using the job interview evaluation form below. Use the sample interview that follows for your role-play, or devise your own script.

(NOTE: Videotape the practice sessions if possible.)

SAMPLE JOB INTERVIEW

A. = Applicant

I. = Interviewer

A. (Enters room, pauses, smiles, and approaches Ms. Hunt, whose hand is extended to shake hands.) Hello, Ms. Hunt, I'm Jon Couch and am applying for the job which you advertised in Sunday's *Downtown News*.

I. Hello, Mr. Couch. Won't you have a seat?

A. Thank you. I have a résumé which may be helpful to you. (Hands Ms. Hunt the résumé and sits down.)

I. This is a very well-prepared data sheet. Well, Jon, tell me about yourself.

A. I'm a senior at Downtown High School. I have been enrolled there in the health occupations program, which will qualify me to work as a health assistant. I am planning to work in the health field and enter radiology technology school soon.

I. Jon, have you had any work experience, or are you currently working anywhere?

A. Yes. I worked at Forest Hills Nursing Home last summer as an orderly. I did patient care and assisted with treatments supervised by the practical nurse.

I. What did you learn from the job at the nursing home?

A. The most important thing I learned was how to work with people. I find I enjoy giving care to people and learned much from the other staff workers.

I. Why do you want this job at Goodbody Hospital?

A. I feel there is more opportunity for me to learn about the medical professions and I could become better acquainted with the hospital's routine and radiology department.

I. When would you be able to start, and what hours could you work?

ASSIGNMENT SHEET #5

A. I could work the 3-11 or 11-7 shift after I graduate from high school next month.

I. Are you aware of the dress code here at the hospital?

A. Yes, and I have white uniforms that were required at the nursing home that could be worn here at the hospital.

I. How much do you expect to earn?

A. I understand from some of the other assistants that a person may begin with the minimum wage plus differential for the 3-11 or 11-7 shift.

I. This is right. Why don't you take this employee handbook with you and check out the pay scale and the fringe benefits.

A. Thank you.

I. Thank you for talking to us. We will let you know about the job soon.

A. (Stands) Thank you for your time, Ms. Hunt. Have a good day. (Shakes hands and leaves.)

JOB INTERVIEW EVALUATION FORM

Preparing for the Interview	YES	NO
1. Were you clean, well-groomed, and neat?	☐	☐
2. Did you wear appropriate clothes and shoes for the type of job for which you are applying?	☐	☐
3. Did you take an ink pen and résumé with the information you may need about Social Security, references, addresses, dates employed, and dates attended school?	☐	☐
4. Did you go alone, not taking parents or friends with you?	☐	☐
5. Were you on time for the interview?	☐	☐
6. Did you know the name and title of the interviewer?	☐	☐
7. Did you know pertinent facts about the company, such as name, kind of facility, services, reasons you want to work there, and what specialty areas are available?	☐	☐
8. When you met the receptionist, did you smile, introduce yourself, state that you have an appointment, follow the receptionist's instructions, and wait patiently?	☐	☐

ASSIGNMENT SHEET #5

Participating in the Interview	YES	NO
9. Did you enter with poise and greet the interviewer by name?	☐	☐
10. Did you shake hands firmly if the interviewer offered her/his hand?	☐	☐
11. Did you introduce yourself and state the purpose of the call?	☐	☐
12. Did you seat yourself only at the interviewer's invitation?	☐	☐
13. Did you show signs of nervousness?	☐	☐
(NOTE: If you do not know where to put your hands, leave them on your lap and keep them still.)		
14. Did you avoid smoking, chewing gum, and placing personal things on interviewer's desk?	☐	☐
15. Did you look alert, interested, and enthusiastic?	☐	☐
(NOTE: Sit slightly forward in the chair to give an alert appearance.)		
16. Were you confident and courteous?	☐	☐
(NOTE: Words such as *Mr., Ms., Miss, Mrs., please, thank you,* and *sir* never go out of style.)		
17. Did you answer questions clearly and avoid interrupting?	☐	☐
Anticipating Questions and Volunteering Proper Information		
18. Did you avoid giving all *yes* and *no* answers?	☐	☐
19. Did you avoid criticisms of former employees or competitors?	☐	☐
20. Did you avoid talking about personal problems?	☐	☐
(NOTE: The interviewer must be interested more in what you can contribute to the facility than what the business can do for you. Do not use a sob story about how desperate you are for a job.)		
21. Did you show copies of your work if applicable?	☐	☐

ASSIGNMENT SHEET #5

	YES	NO
22. Did you state that you are willing to start at the beginning salary?	☐	☐
23. Did you find a true, positive statement concerning your reasons for leaving previous jobs, even if you were fired?	☐	☐
EXAMPLES: "I was laid off, but I learned from my mistakes." "I left because they did not need as many employees due to low patient census."		
24. Did you try to mention your best qualities in relation to something concrete?	☐	☐
EXAMPLE: "I earned seventy-five percent of my expenses while going to school" is better than "I am a hard worker and want to get ahead."		
25. Did you give the lead back to the interviewer if you found yourself talking too long, by saying, "Perhaps you have some other questions to ask me?"	☐	☐
26. Were you prepared for personal questions about your home life and your parents' occupations?	☐	☐
(NOTE: Even though these kinds of questions are illegal, you may have to deal with them. Have a suitable answer ready.)		
27. Did you avoid questions concerning politics or economics?	☐	☐
28. Did you answer questions about career objectives, using specific terms about what you would like to do in the near future in your particular field without limiting your opportunities?	☐	☐
EXAMPLE: A career in radiology that will lead to a specialty area; no locational preference		
29. Did you look directly at the interviewer, smile, use correct English, and speak in clear, moderate tones?	☐	☐
(NOTE: Avoid swearing or using slang terms.)		

ASSIGNMENT SHEET #5

	YES	NO
30. Did you show an interest in the facility by asking questions about it?	☐	☐
31. Did you really try to sell yourself?	☐	☐
(NOTE: Never refer to yourself as just average or fair. Always look for a positive response.)		
32. Did you give the interviewer the opporunity to mention salary and fringe benefits?	☐	☐
(NOTE: After you give the interviewer the opportunity, then you may ask about promotions, malpractice insurance, health insurance, discounts on health care, and uniform allowance if applicable.)		
33. Did you remind the interviewer of the conversation topic if he/she is interrupted by a telephone call?	☐	☐

Closing the Interview

34. Did you watch for signs that the interview was over, such as the interviewer shuffling papers and moving around in her/his chair?	☐	☐
35. Did you ask "May I say one thing more?" or "Would you be interested in . . .?" if the interview seemed to be ending before all important selling points had been made?	☐	☐
36. Did you thank the interviewer for his/her time and leave promptly?	☐	☐
(NOTE: Be sure to write a thank-you letter, call, or visit again to express interest in the job and appreciation for the opportunity to interview. Even if the interviewer does not offer the position, you should learn from every situation and try to improve your interviewing techniques.)		

CAREER SUCCESS
UNIT V

ASSIGNMENT SHEET #6 — WRITE A FOLLOW-UP LETTER

NAME ____ SCORE ________________

Looking for a job can be hard work. The job hunt itself may take several weeks or even months. After an interview, you want to keep in touch regarding possible openings now and in the future; one way to keep your contacts alive without being a nuisance is to write a follow-up letter to the interviewer.

In this assignment you will write a follow-up letter thanking an employer for an interview. To make this last bid for the job a prime example of your excellent work habits, make the letter as clean, neat, and well-worded as you possibly can.

Make sure your letter meets the following standards:

- Typed or written perfectly
- Clean, neat, and attractively arranged on the paper
- Free from spelling, punctuation, and grammatical errors
- Sent within a day or two after the interview

Your follow-up letter should include the following items:

- Expression of appreciation for interviewer's time and interest
- Summary of your qualifications and interest in that position
- Your name, address, and phone number (to make it easier for the employer to contact you)

A. Write a follow-up letter thanking the employer for the interview. Use any form you wish or follow the format of the sample on the next page.

B. Address a legal-sized envelope with the same address as the inside address of the letter.

C. Fold the letter correctly and insert it into the envelope.

ASSIGNMENT SHEET #6

SAMPLE FOLLOW-UP LETTER

623 Merry Street
Anytown, Oklahoma 74023
July 29, 1987

Ms. Terry Vancover, Director of Nursing
Parklawn Nursing Center
549 N. 10th Street
Anytown, Oklahoma 74023

Dear Ms. Vancover:

Thank you for interviewing me for the job in the dietary department of your nursing center. Working at Parklawn would be a good learning experience and give me the opportunity to learn about the field of dietetics. I hope that you will give me the opportunity to prove my worth.

The application form you gave me is enclosed.

I will be available for work August 1, 1987. You may call me at my home after 4:00 P.M. My telephone number is 367-9308.

Sincerely yours,

Jan Hutchins

Jan Hutchins

Enclosure

CAREER SUCCESS
UNIT V

ASSIGNMENT SHEET #7 — EVALUATE A JOB OFFER

NAME ____ SCORE ________________

Applying for a job can be frightening unless you are prepared. If you are prepared and can answer all questions appropriately and present yourself well, you may be offered the position during the interview. Now that the job has been offered, are you ready to accept?

When you are offered a job or are changing jobs, there are many factors to weigh before taking the position. Maybe you feel that you cannot make a decision at that time and that you need to think it over. If so, express your gratitude in a warm and friendly manner and ask if you can have a day or two to consider the opportunity you have been offered. Few employers will deny your request.

When to Say "No"

Should you always turn down an offer that does not measure up?

That depends on several questions. Would it be best to get your foot in the door any way you can? How valuable is the experience you will gain? There are times when it is wise to accept a job that does not meet your ideal.

On the other hand, if both your logical thinking and initial feeling are bad, it may be best to say "Thanks, but no thanks," and look elsewhere.

Evaluate the pros and cons of the job. Do not take the position if you think that it would be totally wrong for you. Evaluate the job offer by answering the following questions.

PART I—The Job

A. Do I clearly understand the nature of the work and is it what I want to do? Is there a written job description? Are my responsibilities reflected in the job title?

____

B. If this is not my dream job, can it be a stepping stone as I acquire the skills and experience needed for advancement?

____

C. Is the background I am building so narrow that I will have difficulty transferring it to another employer?

____

D. Will I be able to make any decisions affecting my work? Do I care? ________________

____

ASSIGNMENT SHEET #7

E. Will I travel or relocate? ______________________________

____

F. Will I be proud to tell my friends what I do? ______________________________

____

G. Is the job permanent or temporary? ______________________________

____

H. If the job is permanent, is there reasonable job security?

____

I. Does this job require union membership?

____

J. Will the job be satisfying to me?

____

PART II—The Facility

A. Is the facility too large, impersonal, or too rule-oriented for my personality?

____

B. Is the facility too small to offer room for advancement or impressive credentials for a future résumé?

____

C. Does the facility have a healthy financial position, and is it a growing organization? ____

____

D. Is there a high turnover of personnel; and if so, why?

____

E. Does the facility promote from within the ranks or turn to outsiders to fill supervisory jobs?

____

F. Have I met the person who would be my immediate supervisor?

____

G. Does the supervisor seem like the sort of person with whom I could get along?

____

ASSIGNMENT SHEET #7

H. Do co-workers appear to be easy to get along with?

____

I. Is the facility's location convenient?

____

J. Is the physical setting acceptable (adequate light, ventilation, cleanliness)?

____

K. What is the facility's reputation for fair treatment of employees?

____

L. Is a written personnel policy available that covers vacations, sick leave, cause for dismissal, and so forth?

____

PART III—Financial Rewards

A. What will be my pay before deductions? What will be my take-home pay?

____

B. Do the earnings meet my minimum needs? Are there automatic cost-of-living increases?

____

C. What is the method of payment (salary, hourly wage, overtime or shift differential)?

____

D. Are raises based on merit, length of service, certification, continuing education hours?

____

E. What fringe benefits are given (health insurance, free parking, sick and vacation leave, malpractice insurance, and others)?

____

F. How much will my actually being at work each day cost (transportation, child care, meals, clothing, etc.)?

____

CAREER SUCCESS
UNIT V

ASSIGNMENT SHEET #8 — ASK FOR A RAISE

NAME ______________________________ SCORE ____________

Asking for a raise . . . the ideal situation exists when true merit is recognized and never needs to be called to the employer's attention. If your situation is not ideal, what can you do? Obviously, there is only one answer; you must bring the matter up; you must ask for a raise.

Use the guidelines below to role-play asking for a raise with another student or a resource person provided by your teacher.

A. Before you speak at all, give your request considerable thought and study.

B. Determine if you are justified in asking for a promotion or a raise by making a good case for yourself in writing. Be objective.

EXAMPLES: Is there a standard for your work in your office? If so, how does your production compare with this standard?

How many clients have you handled without a complaint?

What additional skills have you acquired without a complaint?

If you were to take an employment test at this point, would you do significantly better than on the one you took when you applied for your job?

C. Check your attitudes and work habits.

EXAMPLES: Are you always prompt in arriving for work?

Do you work overtime without complaint when it is necessary?

How many days of work have you missed because of illness?

Are you considered cooperative by your supervisors and your co-workers?

When you finish the work assigned, do you find something else to do?

D. Ask your employer for an appointment.

E. Bring your notes with you to your interview.

F. Explain your progress.

EXAMPLE: "____________, I have enjoyed my work here very much. You may be interested in the progress I have made since I was hired two years ago."

ASSIGNMENT SHEET #8

(NOTE: If you are confident of your worth, you will be able to respond pleasantly to any gruffness or lack of enthusiasm on your employer's part. If the employer challenges your statements, see that you neither back down nor become defensive. Simply and calmly bring up the case that you have prepared. After all, it is merely another employment interview, and you passed the first one.)

G. Thank your employer for the interview and for the time spent

H. Leave

(NOTE: Go back to your work and be patient. Even if your employer seemed impressed with your facts, you must not expect your raise at once. The employer may intend to grant your request after conferring with other members of the firm. *Do not ruin a good case by becoming a nuisance.*)

I. After two weeks, ask your employer if any decision has been made.

(NOTE: Keep your tone friendly but impersonal. Too much emotion has ruined more than one good cause. Even though you may deserve a raise, circumstances such as budget may prevent your employer from giving you a raise.)

CAREER SUCCESS
UNIT V

ASSIGNMENT SHEET #9 — WRITE A LETTER OF RESIGNATION

NAME ____ SCORE ________________

It is not unusual for a person to change jobs a number of times before finding a permanent position. Part of total career success involves notifying your present employer of your departure in a positive way. How do you leave with a good impression?

Sometimes a letter is necessary because of the distance involved or the difficulty of arranging an interview with the proper supervisor. If notice can be given in person, you should do so. It is a forthright, open-handed, and natural method. It usually takes little time, but it affords the opportunity for a discussion which could lead to improved understanding, if not other advantages.

A good letter of resignation, including one that merely confirms a conversation, has many possible advantages. Written in a spirit of friendliness and cooperation, it can be a valuable addition to your personnel file. Later on, if supplying a recommendation, a supervisor may wish to see your file to refresh his/her memory about you. Your "exit" letter will show that you apparently left on friendly terms and gave notice in writing. Under the principle of "all's well that ends well," the letter may cause a better recommendation than would otherwise be written. It can also provide a favorable climate for you to rejoin the institution, if unforeseen events bring you back to the door.

Use the guidelines below and the sample letter to write a letter of resignation.

- Address the letter to the nearest supervisor or department head above you.
- Begin with a statement that will appeal to your reader.

  (NOTE: The purpose of this statement is to place your reader in a relaxed frame of mind so that the reader will be receptive to the message to follow.)

  EXAMPLES: Show appreciation for the months/years of employment under this institution's management.

  Acknowledge the confidence placed in you by various advancements.

  Comment on the rewarding experience you have acquired under their direction.

- Imply that your departure will be taken as an inconvenience.
- Give positive reasons for going to the new job; avoid negative reasons for leaving the job.
- Mention the name of the new employer and the position you are to fill.

ASSIGNMENT SHEET #9

- Give an appropriate time notice.

  (NOTE: This time interval should be reasonable enough to allow the company to get a suitable replacement. There is no set time that can be quoted, sometimes a month, sometimes an even longer period of time. Usually the higher you are in the organization, the more likely it is that you should give notice of a month or more.)

- End on a constructive or encouraging note.

  EXAMPLES: Request a personal interview to explain in greater detail.

  Offer to extend the departure date, if possible, while a replacement is being found.

  Suggest a possible replacement if that is not presumptuous.

  Simply offer to be available to help in the transition as you are needed.

ASSIGNMENT SHEET #9

SAMPLE RESIGNATION LETTER

May 3, 1987

Jim King, Medical Technology Lab Director
Pathology Laboratories, Inc.
1022 Kline
Metropolitan, Ohio 17900

Dear Mr. King:

Two weeks ago I had no idea that I might be writing you this letter. My two years here at the Pathology Laboratory has been a rewarding learning experience. All the guidance and educational opportunities given to me are appreciated.

Last week, however, I received a job opportunity which is too good to pass up. Great Things Memorial Hospital in my hometown of Progress has offered me the job as Department Head of the new Medical Laboratory Research Department. I will be able to go back to the university for special courses in research, and setting up the new laboratory will be a challenge.

I have decided to accept the offer and will be moving to Progress July 6, 1987. This will give you time to find someone to be trained for my position.

If there is anything to be done the next few weeks to help the office prepare for my departure, I shall be happy to be of service.

Respectfully yours,

Frances Whitten

Frances Whitten
Medical Laboratory Technician

CAREER SUCCESS
UNIT V

ASSIGNMENT SHEET #10 — EVALUATE PERSONAL HABITS ASSOCIATED WITH CAREER SUCCESS

NAME ______________________________________

Good habits are necessary in order to establish good human relations and a good relationship with co-workers, employer, and clients. Complete the evaluation below and then answer the questions that follow.

(NOTE: If you have not yet been employed, base your evaluation on "work situations" in the classroom.)

WORKING WITH OTHERS	YES	NO
Do you do your own work and not leave it for someone else?	☐	☐
Do you clean up after yourself?	☐	☐
Are you willing to learn from others about how to do a job better?	☐	☐
Do you contribute to morale and team spirit at your place of business?	☐	☐
Do you learn names of people with whom you work as soon as possible?	☐	☐
Do you take a sincere interest in co-workers, their families, and their interests?	☐	☐
Are you a good listener?	☐	☐
Do you admit mistakes without making excuses?	☐	☐
Do you assume blame for things that are your fault?	☐	☐
Do you avoid gossip?	☐	☐
Do you support co-workers?	☐	☐
WORKING WITH EMPLOYER (OR TEACHER)		
Are you cheerful?	☐	☐
Do you feel your job is a privilege, not a right?	☐	☐
Do you try always to do the best you can?	☐	☐
Do you know your job?	☐	☐

ASSIGNMENT SHEET #10

	YES	NO
Are you on the job unless excused?	☐	☐
Are you on time and ready to work?	☐	☐
(NOTE: Do a full day's work for a full day's pay!)		
Do you try to avoid waste of all kinds of material, time, equipment?	☐	☐
Do you look for a better way to do the job?	☐	☐
Do you tell the truth, and are you sincere?	☐	☐
Do you ask questions when you need help?	☐	☐
Do you try to see employer's side when there is a problem?	☐	☐

WORKING FOR CLIENTS

Do you know what is expected of you, and do you do your job well?	☐	☐
Do you give professional treatment to clients?	☐	☐
Do you keep promises made to clients?	☐	☐
Are you polite to clients?	☐	☐
Do you recognize clients as buyers of your service and give them their money's worth?	☐	☐
Are you sincere?	☐	☐
Do you smile?	☐	☐
Are you friendly, interested, and sympathetic?	☐	☐
Do you gain the client's confidence and listen?	☐	☐
Do you try not to rush the clients?	☐	☐
Do you avoid arguing with an angry client?	☐	☐
Do you avoid comments that might upset a client?	☐	☐
Do you refer matters you cannot handle to the supervisor?	☐	☐

CAREER SUCCESS
UNIT V

ASSIGNMENT SHEET #11 — INTERVIEW AN EMPLOYER

NAME ______________________ SCORE __________

Part of career success focuses on getting along with and establishing a positive relationship with employer(s). EMPLOYERS ARE HUMAN! This activity will provide an opportunity for you to find out "first-hand." Arrange to interview an employer in your community. This interview can help you to get to know an employer and get you started toward good human relations with the employers.

To help you get going, a list of questions you might ask the employer is given below. In the spaces provided, jot down the answers given to you during the interview. At the close of the interview, thank the employer for taking time to answer your questions.

A. How long have you been in this line of work? ______________________

B. How long have you been an employer? ______________________

C. What type of training or education do you have for this job?

____

____

____

D. How many employees do you oversee? ______________________

E. What kind of employee do you get along with best?

____

____

____

____

F. Do you treat each employee as an individual? ______________________

G. Do you take pride in winning an employee's friendship? ______________________

H. Do you treat each client as an individual? ______________________

I. Do you take pride in winning a client's friendship? ______________________

J. Do you like your job? Why?

____

____

ASSIGNMENT SHEET #11

K. Does your work sometimes make you irritable or upset? Why?

L. What is the best part of your job?

M. What do you feel are your strengths in personal habits associated with job success?

N. What do you feel are your weaknesses in personal habits associated with job success?

O. If you could start over, would you go into the same kind of work again? If not, what would you like to do?

P. Would you encourage your child to go into your kind of work? Why?

PERSONAL HEALTH
UNIT I

UNIT OBJECTIVE

After completing this unit, the student should be able to identify positive health behaviors related to work skills. The student will show this knowledge by selecting foods that meet nutritional needs and by completing the unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match terms associated with personal health to their correct definitions.
2. Name characteristics that indicate good health.
3. List factors that influence health and appearance.
4. Select from a list essentials of body cleanliness.
5. List elements of complexion care.
6. Select from a list essentials of well-groomed hair.
7. Identify and describe good and poor body posture.
8. List aspects of clothing and accessory selection to maintain health.
9. Match terms associated with nutrition to their correct definitions.
10. Name functions of food.
11. Name reasons why good nutrition is essential.
12. Select from a list factors that influence food habits.
13. Name the basic nutrients.
14. Name the four basic food groups and the suggested daily servings of each.
15. Select from a list factors that affect energy requirements.
16. Name factors included in the wellness concept.
17. Name the characteristics of an emotionally mature person.
18. Arrange in order steps to improve personality.

OBJECTIVE SHEET

19. Match defense mechanisms to their correct definitions.
20. Distinguish between "normal" and "abnormal" behavior.
21. Select from a list factors that contribute to mental illness.
22. List ways to prevent an emotional problem.
23. Select foods that meet minimal nutritional needs.

PERSONAL HEALTH
UNIT I

INFORMATION SHEET

I. Terms and definitions associated with personal health

A. **Anxiety** — Feeling of worry or uneasiness about what might happen

B. **Attitude** — Mental disposition toward a person, group, thing, or situation

(NOTE: Attitude can come from the conscious or unconscious mind and is developed through cumulative experience.)

C. **Behavior** — Way an individual acts or performs

D. **Conscience** — Knowledge or feeling of right and wrong with a compulsion to do right

E. **Conscious mind** — The part of the mind we are aware of; the here and now

EXAMPLE: While you are reading this statement, you are using the conscious mind.

F. **Defense mechanism** — Unconscious mental process by which we reduce anxiety with a situation or internal conflict

G. **Depression** — Mental state characterized by dejection, lack of hope, sadness

(NOTE: Depression can range from a mild case of the blues to a psychotic suicidal state.)

H. **Emotion** — A feeling with resulting mental and physical states

EXAMPLES: Fear, hate, love, anger, grief, joy

I. **Health** — State of complete physical, mental, and social well-being, not merely the absence of disease or infirmity

(NOTE: This definition comes from the World Health Organization, a group concerned with world-wide health problems and their prevention.)

J. **Mannerism** — Habit peculiar to an individual; an exaggeration of speech or behavior

EXAMPLES: Useless acts of fidgeting or nervousness such as doodling, table drumming, knuckle cracking, hand wringing, nail biting, and hair twisting

K. **Neurosis** — Mild form of mental illness in which a person is in contact with reality but may have anxiety, fear, apprehension, depression, or panic in response to stressful environmental conditions

INFORMATION SHEET

L. **Personality** — Total reaction of a person to his/her environment; traits, characteristics, and modes of behavior that make us individuals

M. **Phobia** — Irrational fear

EXAMPLES: Hydrophobia (fear of water)
Claustrophobia (fear of closed spaces)
Acrophobia (fear of heights)

N. **Psychosis** — Mental disorder in which the person is totally out of touch with reality, cannot function normally, and has a deranged personality

O. **Subconscious mind** — The part of the mind just below immediate awareness; stores memories that can be recalled at will

EXAMPLE: What you had for lunch yesterday is probably information that can be easily recalled but is not part of your immediate awareness.

P. **Unconscious mind** — The part of the mind that is closed to immediate awareness; stores memories that cannot be recalled at will

EXAMPLE: Most memories from early childhood cannot be recalled at will. Someone may be able to remember a gift received for the fifth birthday, but that memory may have been reinforced by photographs or repetition by family members.

II. Characteristics that indicate good health

A. Clear, smooth skin

B. Bright, clear eyes

C. Good body posture

D. Cheerful disposition

(NOTE: If you are tired or not eating well, you are much more likely to be irritable.)

E. Clean, shining hair

III. Factors that influence health and appearance

A. Cleanliness

B. Food

(NOTE: A well-balanced nutritional diet based on the four basic food groups is essential for good health and an attractive appearance.)

INFORMATION SHEET

C. Elimination

(NOTE: Irregular elimination habits can cause headaches, bad breath, and a poor complexion.)

D. Exercise

E. Sleep and rest

F. Posture

G. Dental care

H. Climate

I. Dress

(NOTE: Clothing as well as accessories influence health and appearance.)

J. Habits

EXAMPLES: Chemical dependency; smoking, dipping, or chewing tobacco; brushing teeth

K. Hobbies/recreation

IV. Essentials of body cleanliness

A. Daily bath or shower

(NOTE: A daily bath or shower with soap and water is the single most important health and beauty practice. If you choose to use cologne or body powder after a bath or shower, use one that is lightly scented. A strong scent, even of your favorite fragrance, may nauseate some people.)

B. Daily use of a deodorant or antiperspirant

(NOTE: Body odor can be very offensive.)

C. Daily change of underwear

D. Regular dental care

(NOTE: Brush teeth after every meal if possible, use dental floss daily, and have a dental checkup every six months. Breath odor can be quite offensive to an ill person. Brushing teeth and using mouthwash and breath mints can help prevent odors from smoking and eating highly seasoned foods.)

INFORMATION SHEET

E. Clean hair

(NOTE: Men who wear facial hair should keep it clean also.)

F. Clean, neatly trimmed or filed fingernails

V. Elements of complexion care

A. Proper facial cleansing upon arising and before going to bed

(NOTE: Determine your complexion type: dry, oily, or normal. Buy appropriate products for your skin type.)

B. Proper diet

(NOTE: A well-balanced diet will help maintain a healthy complexion.)

C. Regular elimination

D. Plenty of sleep and rest

E. Exercise and stimulation

(NOTE: The skin needs circulatory stimulation, fresh air, and sunshine.)

VI. Essentials of well-groomed hair

A. Clean hair

(NOTE: Shampoo as often as needed. Oily hair, for instance, will require more frequent shampooing than dry hair.)

B. Clean scalp

(NOTE: Treat scalp conditions as needed. Dandruff shampoo can be bought over the counter. If the condition becomes worse or affects a large part of the scalp, consult a dermatologist.)

C. Clean equipment

(NOTE: At least once a week, clean your brush and comb with warm soapy water. Avoid borrowing another person's comb or brush.)

D. Appropriate, easy-care hairstyle

(NOTE: Your choice of hairstyle may be influenced by your hair texture and face contour as well as by the job you will be doing and whether your employer has a dress code. Since hair is a carrier of bacteria, many dress codes include hairstyle restrictions.)

INFORMATION SHEET

VII. Characteristics of good posture (See Figures 1-4)

(NOTE: As a member of the allied health team, you should be a good example as well as a teacher of good health practices. Body mechanics and good posture are essential for the many occupations that involve lifting, carrying, or sitting or standing for long periods of time.)

A. Shoulders held erect

B. Chest held high

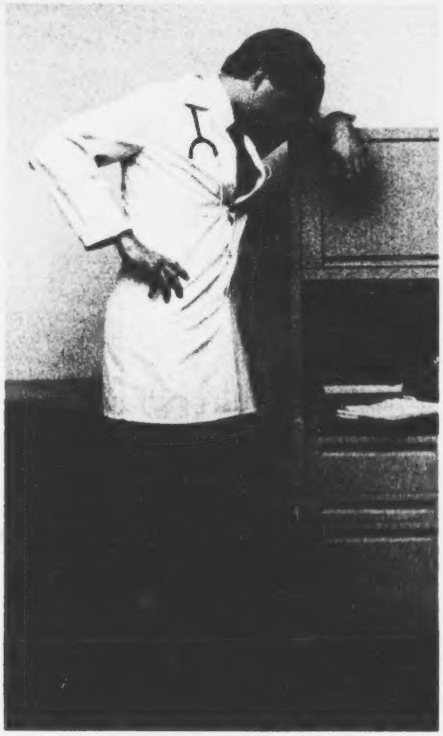
C. Head held erect

D. Abdomen pulled in

E. Body weight distributed on both feet (standing)

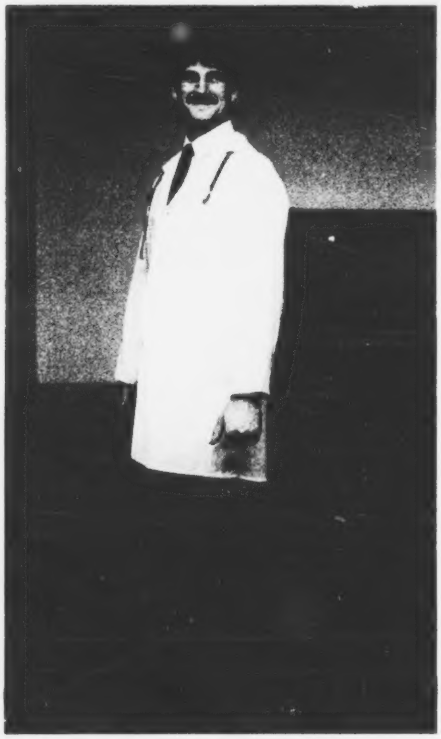
F. Both feet placed flat on the floor

FIGURE 1



Poor

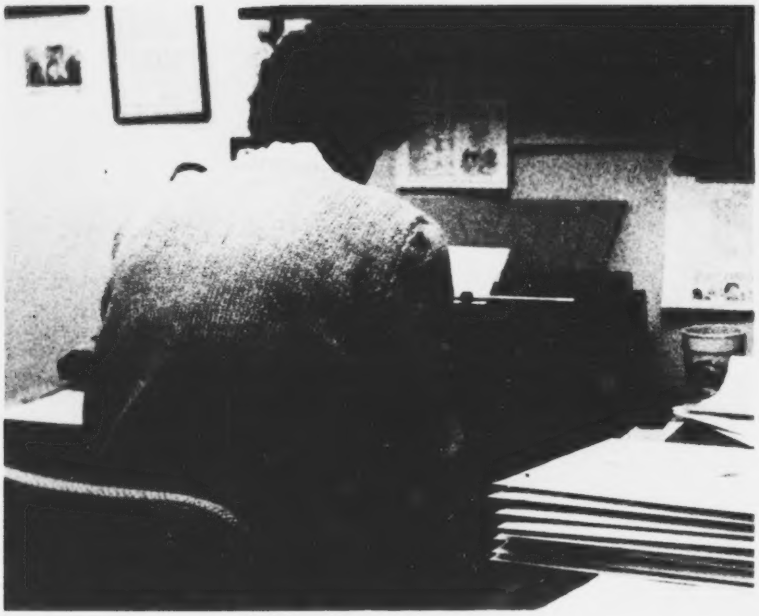
FIGURE 2



Good

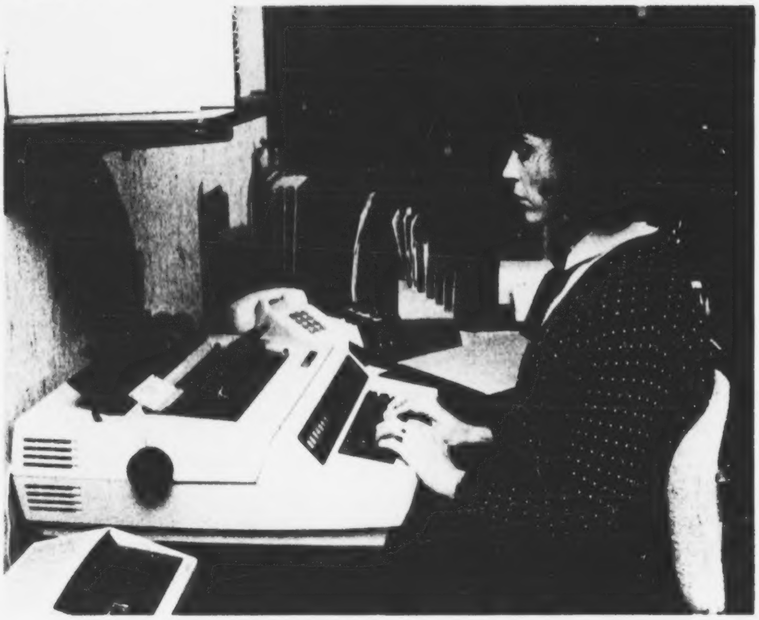
INFORMATION SHEET

FIGURE 3



Poor

FIGURE 4



Good

INFORMATION SHEET

VIII. Clothing and accessory selection to maintain health

A. Properly fitted clothing

(NOTE: Some clothing that is too tight can restrict circulation.)

B. Clothing fabric and weight appropriate for season or work climate

C. Properly fitted shoes that give some support and have cushioned soles

(NOTE: If your occupation involves much standing or walking, wearing properly fitted shoes may avoid foot problems later.)

D. Hose that do not hinder circulation

EXAMPLES: Panty hose instead of knee-high hose under slacks; support hose if needed

E. Jewelry that *can* be cleaned well but *cannot* damage your own or clients' skin, *cannot* get caught in equipment, and *cannot* be pulled by children, animals, or frightened people

EXAMPLES: Avoid dangling earrings, large ornate rings, and long necklaces.

IX. Terms and definitions associated with nutrition

A. **Amino acids** — Chemical compounds that are components of proteins, essential for normal growth and development

B. **Anorexia** — Lack or loss of appetite for food

C. **Bulimia** — Eating disorder characterized by episodes of continuous eating followed by periods of depression and self-deprivation

D. **Cholesterol** — Fatlike, pearly substance found in animal fats, oils, bile, blood, brain tissue, milk, egg yolk, nerve fibers, liver, kidneys, and adrenal glands

E. **Dental caries** — Gradual decay of enamel and dentin of a tooth

F. **Diet** — Food and drink consumed each day

G. **Dietetics** — Science of the use of foods in health and disease

H. **Diet therapy** — Modifications in the normal diet to meet requirements created by disease or injury

I. **Digestion** — Process of changing food in the mouth, stomach, and intestines so that it can be absorbed by the blood and used by the cells

J. **Food** — Substance that the body uses to yield heat and energy, to promote growth, to regulate body processes, and to repair tissues

INFORMATION SHEET

K. **Hydrochloric acid** — Normal constituent of gastric juices produced by glands in the stomach

L. **Lipid** — Oily substance not soluble in water

M. **Malnutrition** — Poor nourishment resulting from improper diet or a defect in metabolism

N. **Nutrient** — Chemical substance found in food that is necessary for good health

O. **Nutrition** — Result of those processes whereby the body takes in and uses food for growth, development, and maintenance of health

P. **Obesity** — Condition in which there is an excessive amount of fat in the body

X. Functions of food

A. Provide heat

B. Promote growth

C. Repair tissues

D. Regulate body processes

XI. Reasons why good nutrition is essential

A. Promotes a healthier body and mind

B. Provides greater personal energy and vitality

C. Promotes resistance to illness

D. Speeds healing

E. Produces stronger bones and muscles

F. Promotes good posture

G. Helps individual feel and sleep better

XII. Factors that influence food habits

A. Personal attitudes

(NOTE: Childhood training and food preferences affect your attitude toward food.)

EXAMPLES: Likes and dislikes of particular foods and the methods of preparing them

A personal bent toward vegetarianism

INFORMATION SHEET

B. Food habits of friends and family members

(NOTE: Food habits and preferences of people whom we often eat with greatly influence our own food habits.)

C. Living alone

EXAMPLE: Many people who live alone will not cook for themselves.

D. Region and availability of food

(NOTE: Certain areas of the country have characteristic foods. The increasing use of transportation, however, has brought about a greater variety of foods available in all parts of the country.)

E. Income

(NOTE: Low-income families spend a higher proportion of their incomes for food than other families do.)

EXAMPLE: Many low-income families have a diet high in starches because starchy foods are inexpensive.

F. Age

EXAMPLES: Teenagers often eat "on the run" without regard for proper nutrition.

G. Activity

EXAMPLES: Moderate exercise stimulates the appetite. Heavy exercise initially decreases the appetite.

H. Religion

(NOTE: Various religions have diet restrictions that require special planning to assure adequate diet.)

I. Culture and race

(NOTE: Food preference and preparation varies from one culture to another.)

EXAMPLES: British—bland
Spanish—highly spiced
Southern—fried

INFORMATION SHEET

J. Pregnancy and lactation

EXAMPLES: Pregnant and lactating women require high-protein diets. Pregnant women do not need additional calories; but lactating women usually require more, especially liquids.

K. Media

(NOTE: Communication about foods and food preparation methods in articles and on radio and television influence food habits.)

XIII. Basic nutrients

A. Proteins

B. Carbohydrates

C. Fats

D. Minerals

E. Vitamins

F. Water

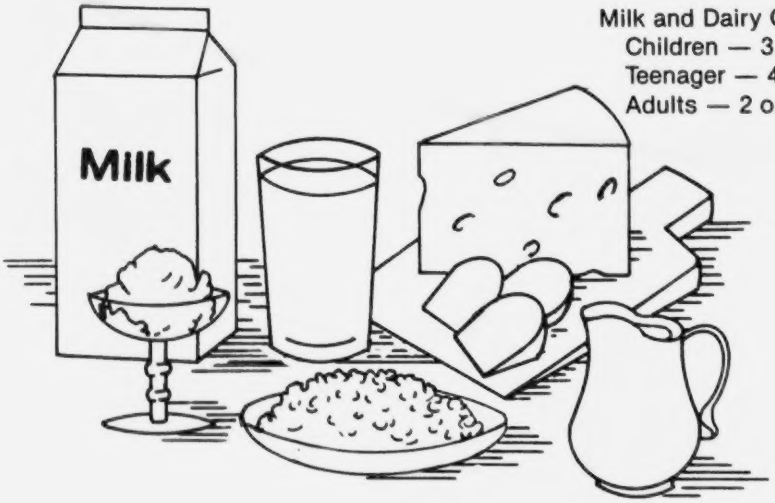
XIV. Four basic food groups and suggested daily servings of each

(NOTE: The main part of the diet should be selected from the four basic food groups. Other foods may be added to make meals more appealing and satisfying.)

A. Milk and dairy — Two servings (Figure 5)

(NOTE: Children and pregnant women need three to four servings; teenagers and lactating mothers need four or more servings.)

FIGURE 5

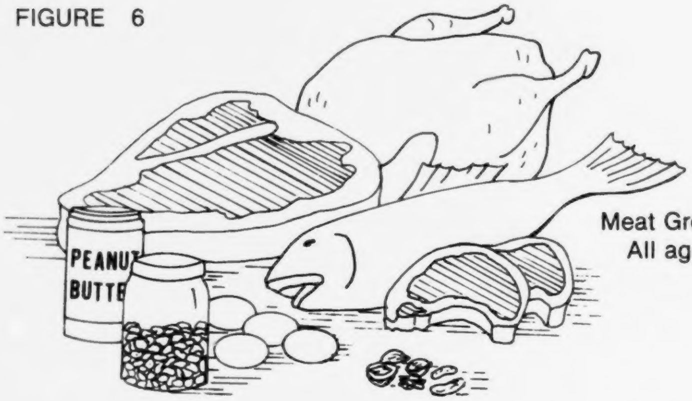


Milk and Dairy Group:
Children — 3 or more glasses
Teenager — 4 or more glasses
Adults — 2 or more glasses

INFORMATION SHEET

B. Meat — Two or more servings (Figure 6)

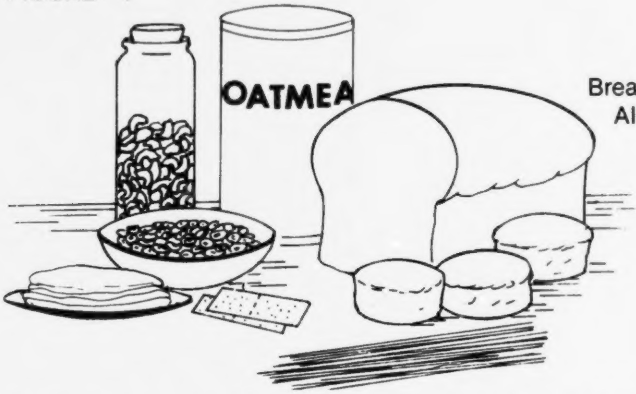
FIGURE 6



Meat Group:
All ages — 2 or more servings

C. Bread and cereal — Four or more servings (Figure 7)

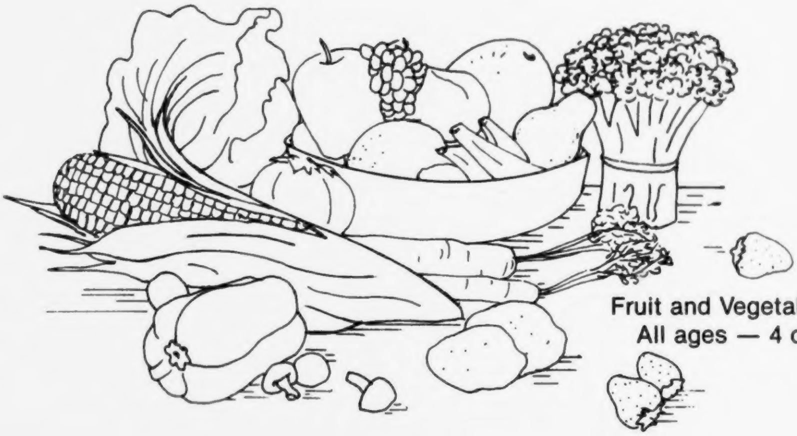
FIGURE 7



Bread and Cereal Group:
All ages — 4 or more servings

D. Fruit and vegetable — Four or more servings, including one citrus fruit (Figure 8)

FIGURE 8



Fruit and Vegetable Group
All ages — 4 or more servings

INFORMATION SHEET

XV. Factors that affect energy requirements

- A. Physical activity
- B. Age
- C. Size
- D. Sex
- E. Endocrine secretions
- F. Body temperature
- G. Medications
- H. Emotions
- I. External climate
- J. Sleep
- K. Nutrition
- L. Pregnancy

XVI. Factors in the wellness concept

- A. Diet
- B. Exercise
- C. Prevention of disease
- D. Stress management
- E. Emotional health

XVII. Characteristics of an emotionally mature person

(NOTE: The generally accepted definition of a mentally healthy person is someone who has the ability to adjust to new situations and to deal with personal problems without severe distress.)

- A. Is considerate of others
- B. Channels emotional drives into constructive activity
- C. Accepts disappointments without severe distress

INFORMATION SHEET

D. Is willing to wait for rewards or work for them

E. Adjusts to other people and new situations

XVIII. Steps to improve personality

A. Recognize the need for improvement

B. Have a desire to improve

C. Evaluate strong and weak points

D. Develop a plan for improvement

E. Follow through with your plan

XIX. Defense mechanisms

(NOTE: Everyone uses defense mechanisms to deal with stress. Using coping mechanisms is part of our humanness. It is important to realize that they are used unconsciously.)

A. **Compensation** — Developing a desirable trait to counterbalance a weak or undesirable one

EXAMPLES: A student poor in sports may concentrate on making good grades.

A plain girl may develop her musical ability.

B. **Conversion** — Changing emotional conflicts into physical symptoms

EXAMPLE: You may get ill (headache) just prior to an activity that you really do not want to do (take a test).

C. **Denial** — Evading disagreeable realities by ignoring them

EXAMPLE: A physician informs her patient that he has cancer. Five minutes after the doctor leaves, the patient asks when the doctor will be here to visit so that he can find out what is wrong with him.

D. **Displacement** — Transferring feelings about a person or thing to another, safer object

EXAMPLES: The teacher gives you extra homework, then you go home and shout at your younger brother and sister.

You argue with your parents and slam the door behind you.

E. **Identification** — Taking on the thoughts or feelings of another person as if they were your own

EXAMPLES: Crying at a sad movie; imitating the actions of someone you admire

INFORMATION SHEET

F. **Projection** — Blaming others for our own mistakes and shortcomings

EXAMPLES: "I failed that test because the teacher asked tricky questions."

"I couldn't work in that office because the boss had it in for me."

G. **Rationalization** — Justifying behavior by finding a logical motive for what we want to do

EXAMPLES: "I didn't want to be elected president of the class anyway because I really don't have the time."

When you buy something you really cannot afford, you tell yourself that it was such a bargain that it saved you money.

H. **Regression** — Retreating to a former level of behavior

EXAMPLE: Temper tantrums

I. **Repression** — Pushing threatening or painful thoughts into the unconscious mind

EXAMPLE: If bitten by a dog, a child may grow up to be afraid of dogs, but not recall why.

J. **Sublimation** — Redirecting a negative drive to a constructive activity

EXAMPLES: Ellen loves sports, and she often uses them to work out her feelings and hostility instead of directing these feelings towards others.

An artist with a strong sexual drive may paint nude pictures.

XX. "Normal" and "abnormal" behavior

A. Normal behavior

1. Solve problems by working out compromises
2. Face minor crises with a minimum of emotional turmoil and frustration
3. Adapt behavior to other people and adjust easily to new situations
4. Pursue goals; feel that life has purpose

INFORMATION SHEET

B. Abnormal behavior

1. Feel controlled by the environment
2. Cannot adjust to other people
3. Lose purpose and pleasure in living
4. Can no longer live with themselves or with others

XXI. Factors that contribute to mental illness

A. Stress

B. Tension

C. Emotional conflicts

EXAMPLES: Guilt, anxiety, trouble in the home

D. Hereditary traits

XXII. Ways to prevent an emotional problem

(NOTE: Keep balance in your life by working, sleeping, relaxing, and engaging in some type of recreation to keep pressure under control.)

A. Talk it out

(NOTE: Blow off your emotional "steam" to a sympathetic listener.)

B. Think it out

(NOTE: Consider both sides of a problem and attempt to see the other person's viewpoint. You could learn something.)

C. Work it off

EXAMPLES: Jog, play tennis, sew, or get deeply involved in something else.

PERSONAL HEALTH
UNIT I

ASSIGNMENT SHEET #1 — EVALUATE PERSONAL HEALTH AND GROOMING HABITS

Good grooming is essential to career success. Good personal appearance is a major reason employers give for hiring an individual. First impressions do count when going for an interview, and you may be judged on how you look. As an employee, you will represent your employer; how you appear may decide how the public feels about your place of employment.

Complete the following chart by checking the box that most accurately describes your personal habits. After completing this chart, evaluate the areas in which you may need some improvement. Answer the questions following the chart.

PART I

	Always	Most of Time	Occasionally	Seldom or Never
BODY CLEANLINESS AND CARE				
A. Do you bathe or shower at least once daily?				
B. Do you use an effective deodorant daily?				
C. Do you keep your underwear fresh and clean?				
POSTURE				
D. Do you sit and stand properly without slouching?				
TEETH, MOUTH AND BREATH				
E. Do you have a dental checkup at least once a year?				
F. Do you brush your teeth at least twice daily?				
G. Do you use dental floss daily?				

ASSIGNMENT SHEET #1

CLOTHING	Always	Most of Time	Occasionally	Seldom or Never
H. Do you keep your clothes in good repair: that is, no ripped seams, no missing buttons, and no pins, tape, or staples in hems?	______	______	______	______
I. Do your clothes look neat, clean, and pressed?	______	______	______	______
J. Do your clothes fit properly?	______	______	______	______
K. Do you wear shoes that fit properly?	______	______	______	______
L. Do you brush or polish your shoes and keep them in good condition?	______	______	______	______
GENERAL HEALTH AND APPEARANCE				
M. Do you make an effort to eat a balanced diet each day?	______	______	______	______
N. Do you watch your weight carefully and try to keep it at the recommended weight for you?	______	______	______	______
O. Do you avoid junk foods that you know are harmful to your complexion and general health?	______	______	______	______

PART II

List areas that you marked occasionally or seldom or never, and describe how you would improve these areas.

____

____

____

____

____

____

____

____

PERSONAL HEALTH
UNIT I

ASSIGNMENT SHEET #2 — SELECT FOODS THAT MEET MINIMUM NUTRITIONAL NEEDS

NAME ______________________________ SCORE ______________

People are healthy and strong only if they eat the right kinds of food in the correct amounts. Today, lack of nutrient intake is a major health problem. Many people select food, regardless of nutrient content, to satisfy hunger and other needs. People in different life cycle stages, except infants and those on special diets, can eat the same basic meals. Certain nutrients are required by all people, yet the foods people eat in order to fulfill their nutrient requirements will differ. Regardless of the number of meals eaten, the *total food intake* for the day should provide necessary nutrients to allow the body to function at its best.

One of the most helpful resources for nutritional food planning or selection is the Basic Four Food Group Guide. This guide divides foods into four groups and recommends number of servings that should be eaten per day from each group. If foods are consumed in quantities recommended by this guide, a large percentage of the Recommended Daily Dietary Allowances (R.D.A.) will be met.

PART I

In the spaces provided below, write specific nutritional considerations for each of the following people.

A. Jerry, your brother, is a 16 year-old junior in high school. It is football season, and he is a starting player on the football team.

____

____

____

____

____

B. Kathy, your sister, is 23 and in her 8th month of pregnancy. She teaches full-time at the local elementary school.

____

____

____

____

____

ASSIGNMENT SHEET #2

C. Tom, your grandfather, is 70 years old and fairly active. He has characteristics of his age group. He fails to get enough nutrients. He also has problem teeth, poor digestion, and a weak appetite. He needs to avoid many high-calorie foods.

D. Michelle, your niece, is four years old and very active. She is going through a slow period of growth development. She enjoys finger foods and does not like milk.

E. George, your father, is 45 years old. He is having a little trouble adjusting to a new "desk" job, and is gaining weight due to lack of exercise.

ASSIGNMENT SHEET #2

F. Yourself.

____

____

____

____

____

____

PART II

A. What conclusions can you draw from this assignment?

____

____

____

____

____

____

____

____

B. Write an "X" in the blank beside each sentence that was part of your conclusions.

______1. The total daily intake of food for a person is more important than if this food is divided into 2, 3, 4, or 5 meals.

______2. Having nutritious intake is needed for good health and well-being.

______3. All members of a family need the same nutrients, but the amounts and preparation methods vary with the age, sex, and activity of each person.

______4. Eating habits are established early in life.

______5. It is almost impossible to select foods for one meal that will meet the Basic Four Food Group requirements if one has not eaten well at other meals.

ASSIGNMENT SHEET #2

PART III

A. In the spaces provided, list the foods and the quantities of each that you ate yesterday. Use a calorie chart to assist you in estimating the number of calories in each.

BREAKFAST

Foods	Quantities	Calories

LUNCH

Foods	Quantities	Calories

ASSIGNMENT SHEET #2

DINNER

Foods	Quantities	Calories

OTHER

Foods	Quantities	Calories

ASSIGNMENT SHEET #2

B. What additional foods (if any) could you have eaten to ensure that your total daily intake could have met the Basic Four Food Group and calorie requirements?

C. What foods (if any) could you have eliminated to ensure that your total daily intake could have met the Basic Four Food Group and calorie requirements?

PERSONAL HEALTH
UNIT I

ASSIGNMENT SHEET #3 — IDENTIFY DEFENSE MECHANISMS

NAME ____________________ SCORE __________

Everyone uses defense mechanisms to reduce or channel anxiety. Most of us are not aware that we use them; they are unconscious mechanisms. In this assignment you are to identify defense mechanisms used in different situations.

PART I

Ann's day was a disaster from the time she got up this morning. The following incidents show how Ann used different defense mechanisms. Read each situation and determine the mechanisms used.

A. When Ann was getting ready for school this morning, her mother said that Ann's room was a disgrace and that she would be grounded until the room was clean. For weeks Ann had been looking forward to going to the dance tonight. As she was leaving the apartment, Ann kicked one of her stuffed animals and slammed the door behind her.

Mechanism — ____________________

B. Ann's first class was piano, which was her favorite class. Ann was not as good a student academically as her sister, but Ann spent many hours practicing the piano and trying to perfect her musical talent.

Mechanism — ____________________

C. At lunchtime Ann went to the mall where she had been admiring a sweater that was very expensive. Today the store had a sale; all merchandise was priced 20 percent off. Even though the sweater was still too expensive, Ann bought it. She told her friend Sue, "It was such a bargain that I couldn't pass it up."

Mechanism — ____________________

D. Ann did not do well on her math test. Although she had not studied for this test, she told her classmates that she failed the test because the teacher asked trick questions.

Mechanism — ____________________

E. After school Ann felt tense and aggressive, so she went to the gym and played handball.

Mechanism — ____________________

ASSIGNMENT SHEET #3

F. Ann hated cleaning her room, but she knew it would cause friction at home if she did not do it. By the time Ann arrived home, however, she had such a headache that she had to go to bed.

Mechanism — ____

G. As Ann was dropping off to sleep, she thought about Russ Conway, the pianist. She has all his records and attends his concerts whenever he comes to town. One day she hopes to be a concert pianist just like him.

Mechanism — ____

PART II

Read the following information about the Smith family, consisting of Mary and Jim and their children Gary, 14, and Lynne, 9. Name each defense mechanism used in these paragraphs, name the person who used it, and describe the situation in which it was used.

> Last week Mary found out she was pregnant. After informing the children of the news, she realized that they had totally different reactions. Gary is looking forward to a new brother or sister, but Lynne feels threatened by the unborn infant and has started sucking her thumb again.
>
> Gary has a strong academic record and is very good at sports. Lynne's grades have not been outstanding; Lynne says that she doesn't do well in school because her teacher doesn't like girls. Lynne has never shown an interest in sports, but she does like to draw and paint. Last fall she took some art classes after school and was asked to put some of her pictures in the local art show. Lynne says she would rather be an artist than be the smartest person in the world.
>
> One of Gary's friends went skiing for the first time a few weeks ago. There was a tragic accident, and the friend's left leg had to be amputated. While Gary was visiting him, the friend kept talking about his future as a track runner, and did not seem aware of his amputation.
>
> Jim Smith had recently applied for a job in another state. The day he found out that he did not get the position, he left the office in the middle of the afternoon and went home to mow the lawn. Jim said that it was just as well that he did not get that job because he did not want to move anyway and liked the job he had. Mary felt that it was up to Jim as to when and where they moved.
>
> The day Jim came home from work early, he found Mary crying. Asked what was wrong, Mary said, "David was shot this afternoon, and Marge will have to raise her three children by herself, and she has just lost her job and been diagnosed with a terminal illness, and her father has had a stroke and needs her to take care of him." Jim did not recognize the names; he asked who these people were. Tearfully Mary replied, "It was on today's episode of 'All My Relatives.' "

ASSIGNMENT SHEET #3

Mary has started her annual spring cleaning, which involves every member of the family. Today was a particularly trying time. Jim, who had to cancel his golf game tonight to paint the shutters, walked around slamming doors behind him and muttering to himself. Gary did not really want to help. When asked why his chores had not been completed, Gary explained that his teacher had given him too much homework and he did not have time to help with spring cleaning. Lynne completed all her tasks on time.

Jim and the children enjoy livestock shows, and they plan to go to the state competitions this month, just as they have always done. The past three years Mary has been sick, usually with a virus, during the competitions and has been unable to attend. Mary has never really enjoyed the shows because she has a fear of animals, but she always plans to go for the sake of the family.

As a child, Mary had been active in 4-H and one year had exhibited her uncle's calf at the county fair. The calf stepped on Mary's foot just as they were entering the ring, and Mary never wanted to exhibit an animal again. At a recent family gathering, Mary's uncle told Gary and Lynne about their mother's experience in the show-ring. Mary laughed in disbelief at the story: "Uncle Marvin, I never exhibited a calf! I've always been a bit scared of large animals."

ASSIGNMENT SHEET #3

PART III

Think about three situations in which you or someone you know used a defense mechanism. Name the defense mechanism used, and describe the situation in which it was used.

A. Defense mechanism used ____________________

Situation: ____________________

B. Defense mechanism used ____________________

Situation: ____________________

C. Defense mechanism used ____________________

Situation: ____________________

THE LIFE STAGES
UNIT II

UNIT OBJECTIVE

After completing this unit, the student should be able to identify the contributions of Freud, Erikson, and Maslow. The student should also be able to discuss the reactions to death, explore emotions concerning death, and help others cope with death. The student will show this knowledge by identifying growth characteristics and stages of personality development and by completing the unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match to their correct definitions terms associated with the life stages.
2. Name the major contributions of Freud, Erikson, and Maslow.
3. Identify the levels of Maslow's hierarchy of human needs by assessing case studies.
4. Describe the physiologic changes of aging and the results of those changes as they occur in the body systems of the elderly.
5. Match to their correct definitions terms associated with death and dying.
6. Match phases of dealing with the reality of death to their correct definitions.
7. Discuss common reactions of the bereaved.
8. List the stages of mourning.
9. Select from a list guidelines for handling personal grief.
10. Select from a list guidelines for helping those who are bereaved.
11. State guidelines for funeral etiquette.
12. Identify growth characteristics and stages of personality development.

THE LIFE STAGES
UNIT II

INFORMATION SHEET

I. Terms and definitions associated with life stages

A. **Autonomy** — Quality or state of being self-governing

B. **Deciduous teeth** — Primary teeth; also called *baby teeth*

(NOTE: The twenty primary teeth are replaced by thirty-two permanent teeth.)

C. **Dentition** — Process of teething

D. **Discipline** — Process of training and learning

E. **Ephebiatrics** — Study of adolescence

F. **Geriatrics** — Care of the older person; emphasis is on prevention of disabilities, treatment with special attention to the needs created by the aging process, and restoration of the person to a level consistent with the limitations imposed by the aging process

G. **Gerontology** — Study of the aging process

H. **Guidance** — Providing for discipline and learning experiences to aid in optimum growth and development

I. **Initiative** — Energy or aptitude to begin an action

J. **Maturation** — Process of coming to full development

K. **Motor** — Pertaining to any activity or behavior involving muscular movement

L. **Parallel play** — Playing alongside, but not with, another child

M. **Puberty** — Period at which biological changes peak

II. Major contributions of Freud, Erikson, and Maslow

A. Sigmund Freud — Founded field of psychoanalysis; developed theory of personality development based on five stages of psychosexual development

(NOTE: Psychoanalysis uses free association, interpretation, and dream analysis to investigate mental processes.)

B. Erik Erikson — Developed theory of personality development based on developmental tasks

C. Abraham H. Maslow — Identified hierarchy of human needs

INFORMATION SHEET

(NOTE: *Hierarchy* means a classification according to rank or priority. Maslow believed that all humans have levels of needs and that the needs of each level must be met before a person can achieve satisfaction in the next level. Maslow was one of the founders of the field of humanistic psychology, a field that studies feelings, motives, and wishes as well as behavior.)

III. Hierarchy of human needs as described by Abraham H. Maslow

(NOTE: According to Maslow, one's needs at the lower level have to be met before a person can be concerned with the needs at the next level. During a person's lifespan, the levels will fluctuate according to circumstances.)

A. Physiological needs

(NOTE: Often called *basic* or *primary needs*, physiological needs are basic to physical survival. Extreme deprivation of any one of these needs will cause death of the person or death of the species.)

EXAMPLES: Needs for oxygen, sleep, water, food, excretion, protection from extreme temperatures, sex

(NOTE: Sex is not necessary for the survival of the individual, but for the survival of the species.)

B. Safety needs

EXAMPLES: Needs for protection from harm, security from threats

C. Love and belonging needs

EXAMPLES: Needs to give and receive love and affection, to belong
Need for emotional security

D. Esteem needs

EXAMPLES: Needs for status, recognition, self-worth, and self-respect

E. Self-actualization needs

EXAMPLES: Needs to accomplish and do, to reach full potential
Need for personal growth

INFORMATION SHEET

IV. Physiologic changes in the elderly (Table 1)

TABLE 1

Body System	Physiologic Changes*	Results*
Cardiovascular	↓ Heart size ↓ Cardiac output ↓ Heart rate ↑ Arteriosclerosis	↓ Oxygenation ↑ Chance of heart failure ↑ Blood pressure
Endocrine	↓ Secretion of hormones	↓ Breast mass ↓ Ovary size ↓ Uterus size ↓ Vaginal secretions
Sensory	↓ Accommodation ↓ Diameter to lens ↑ Opacity of lens	↓ Light to retina ↓ Night vision ↑ Sensitivity to glare ↓ Peripheral vision ↓ Color vision
	↓ Functioning of middle and inner ear	↓ High-frequency sounds ↓ Balance
	↓ Reflexes ↓ Touch receptors	↓ Pain recognition ↑ Susceptibility to heat and cold
Integumentary	↓ Sebaceous secretions ↓ Subcutaneous fat ↓ Thickness of epidermis	↑ Dry skin ↑ Wrinkling ↑ Thickness of nails ↓ Hair color and distribution
Musculoskeletal	↓ Bone calcium ↓ Water of intervertebral disks ↓ Blood supply ↓ Elastic tissue ↓ Muscle mass	↑ Curvature of spine ↓ Height ↓ Mobility ↑ Risk of falls and fractures
Nervous	↓ Brain cells ↓ Nerve fibers	↓ Reflexes ↓ Memory
Digestive	↓ Gastric secretions ↓ Peristalsis ↓ Sensory receptors ↓ Number of teeth	↑ Constipation ↓ Appetite ↓ Ability to taste ↓ Ability to chew ↓ Nutritional status

*↑ Increased; ↓ decreased.

INFORMATION SHEET

TABLE 1 (Continued)

Body System	Physiologic Changes*	Results*
Urinary	↓ Blood supply	↑ Urine concentration
	↓ Nephrons	↓ Bladder capacity
	↓ Muscle tone	↑ Residual urine
	↑ Size of prostate	↑ Chance of infection
		↓ Urinary stream
Respiratory	↓ Elasticity	↓ Gas exchange
	↑ Thickness of capillaries	↑ Shortness of breath
	↓ Number of capillaries	↑ Risk of disease
Reproductive	↓ Estrogens	↓ Epithelial cells of vulva
	↓ Seminal fluid	↑ Chance of vaginitis

*↑ Increased; ↓ decreased.

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V. Terms and definitions associated with death and dying

A. **Active euthanasia** — Deliberately bringing about the death of a person who is suffering from an incurable disease or condition, as by administering a lethal drug

B. **Bereavement** — Deprivation of a loved one by death

C. **Biological death** — Total absence of activity in the brain and central nervous system, the cardiovascular system, and the respiratory system as observed and declared by a physician; also called *legal death* or *brain death*

D. **Burial** — Act or process of burying a dead body

E. **Clinical death** — Cessation of life as indicated by the absence of heartbeat or respiration

F. **Cremation** — Incinerating a dead body

G. **Cryonics** — Techniques in which cold is applied for a variety of therapeutic goals, including brief local anesthesia, destruction of superficial skin lesions, and preservation of cells, tissue, organs, or the entire body

H. **Eulogy** — Tribute; personal review of an individual's life

I. **Funeral** — Ceremony during which relatives and friends pay their respects and comfort the family; body is present at the ceremony

INFORMATION SHEET

J. **Grief** — Emotional reaction that follows the loss of something

(NOTE: Any important loss in a person's life such as divorce, loss of a limb, loss of a job, or death of a family member, friend, or pet can cause grief.)

K. **Memorial service** — Ceremony during which relatives and friends pay their respects and comfort the family; body is not present at the service

L. **Mourn** — To feel or express sorrow after a loss

M. **Obituary** — Notice of someone's death, as in a newspapaer, usually with a brief biography

N. **Passive euthanasia** — Deliberately bringing about the death of a person who is suffering from an incurable disease or condition by allowing the person to die by withholding treatment

VI. Phases of dealing with the reality of death

(NOTE: Knowledge of these stages can help families, friends, and medical personnel understand what the dying person is experiencing. *The stages may occur in any order*. A person may go through these same stages when experiencing a loss other than death. These stages were identified by Dr. Elisabeth Kubler-Ross, who has done much research with dying patients.)

A. Denial — Ignoring a terminal illness; usually occurs when a patient first learns that he or she is terminally ill

(NOTE: The denial stage is important. The dying person says, "No, not me." This stage helps cushion the impact of the patient's awareness that death is inevitable.)

B. Anger — Resenting those who will remain healthy and alive

(NOTE: There may be anger with God or others for causing the death or causing the suffering felt by the survivors.)

C. Bargaining — Accepting the fate of death but trying to get more time

(NOTE: The patient may "bargain" with God for more time. He or she will often promise to be good if granted more time. Many times a patient may use a special family event such as a wedding or graduation in bargaining.)

D. Depression — Expressing grief over past losses, things not done, and wrongs committed

(NOTE: During this stage, the patient feels sadness for the family.)

E. Acceptance — Knowing that death is near and being ready for it

(NOTE: During this stage, the patient is neither happy nor unhappy, but is simply accepting reality and living life to the fullest as long as possible within physical limitations.)

INFORMATION SHEET

VII. Common reactions of the bereaved

(NOTE: There are as many reactions to death as there are individual people.)

A. Physical

1. Numbness of body parts

   (NOTE: Bereaved persons often remember that if pins were stuck into their bodies, that the pain would go unnoticed.)

2. Pain and tightness in the throat

   (NOTE: Pain and tightness in throat often result from holding back emotions or having cried a great deal.)

3. Difficulty with eating and sleeping

   (NOTE: Some people remember that food neither sounded, smelled, nor tasted good.)

4. Physical fatigue

B. Emotional

1. Guilt

   (NOTE: The guilt feelings may result from thinking that everything possible was not done to save the dying person's life. Guilt feelings can result if an argument occurred with the deceased just before he or she died; the survivors may feel guilty about injuries inflicted or apologies not made. Survivors can feel guilty just from being alive.)

2. Anger and hostility toward others

   (NOTE: Sometimes the survivors may blame the medical staff that was in charge of the care for the deceased.)

3. Anger toward the dead person

   (NOTE: The survivors will sometimes feel deserted by the deceased.)

4. Relief or joy

   (NOTE: Relief or joy may result after the death of a person who has suffered for a long period of time or from a very painful illness.)

VIII. Stages of mourning

(NOTE: Mourning is the way people cope with grief. Most people work through the mourning process and can pick up the threads of their lives. It is the healthy way to deal with a great loss. Some people work through the mourning process in a few months; others never reach the acceptance stage.)

INFORMATION SHEET

A. Shock

(NOTE: This stage usually occurs between the death and the final arrangements. In some cases of terminal patients, family members may suffer shock when first informed of the illness.)

B. Intense pain and feelings of loss

(NOTE: This stage of mourning lasts up to two or three months in most people. This stage of mourning is often treated as a weakness or a self-indulgence. However, grief is a psychological need that must be expressed if the person is to make a healthy adjustment to death.)

C. Acceptance and pleasant memories of the deceased

(NOTE: During this stage memories of the deceased should bring joy and pleasure rather than pain or grief.)

IX. Guidelines for handling personal grief

(NOTE: The death of a loved one is painful. When someone dies, thoughts of what might have been enter the minds of the survivors. Holiday seasons may be especially painful for this reason.)

A. Allow yourself to recognize the full reality of the death

EXAMPLES: Viewing the body and discussing the death with friends can help bring about acceptance of the loss.

Attending the wake, funeral, memorial, or graveside service can provide formal recognition of the death and allow the bereaved to get on with the grieving process.

B. Allow time to work through the grief

EXAMPLE: Delay any major decisions until you are thinking clearly and have sought out proper advice.

C. Accept the help of friends and relatives

D. Talk out your grief and cry

(NOTE: These are normal behaviors, and there should be no shame.)

E. Remember the good times that were shared with the deceased

(NOTE: This will help the survivors understand that the grief is worth the time.)

F. Try to avoid unnecessary or long-term feelings of guilt

INFORMATION SHEET

X. Guidelines for helping those who are bereaved

(NOTE: Most people respond to others' plights and want to help. Unfortunately, the highly responsible and delicate job of helping others with emotional problems often appeals particularly to those who have many problems of their own. It takes special skills and understanding to help someone in grief.)

A. Get in touch and stay in touch

(NOTE: Friends should ask when they can see the bereaved. Just being there and available is important. Sometimes the grieving process intensifies after the funeral. Support may be more important six months after the funeral than right after the death.)

EXAMPLES: Write, call, or visit the bereaved

B. Do not take the lead in conversation

(NOTE: Let the bereaved person set the pace and tone.)

C. Share your feelings

(NOTE: Express your sympathy. Be aware of the importance of gestures and nonverbal communication. Sometimes a touch or a facial expression can be much more helpful than words.)

D. Avoid overinvolvement

(NOTE: Allow bereaved persons to do as much for themselves as they feel like doing.)

E. Do not cite examples from your own life and your experiences

(NOTE: Other's experiences sometimes make the person feel unable to handle his or her own feelings, or play down what the bereaved is experiencing.)

F. Suggest community resources

EXAMPLES: Teacher, school counselor, minister, funeral director, close adult friends

G. Help lay out a plan of resocialization

(NOTE: It is important for the bereaved to reestablish social activities when ready. Friends may need to encourage the bereaved.)

XI. Guidelines for funeral etiquette

A. Wear conservative clothing

(NOTE: White or dark, solid colors are more appropriate than bright prints.)

INFORMATION SHEET

B. Share feelings with family members

(NOTE: It may not be necessary to say anything; the family may feel comforted just by your presence. It is all right to cry.)

C. Do not attend private services unless you were related to the deceased or specifically invited

(NOTE: Most wakes, funerals, memorial services, and graveside services are not private.)

THE LIFE STAGES
UNIT II

ASSIGNMENT SHEET #1 — IDENTIFY GROWTH CHARACTERISTICS AND STAGES OF PERSONALITY DEVELOPMENT

NAME ______________________________ SCORE ____________

This assignment sheet deals with growth characteristics and the stages of personality development as defined by Freud and Erikson. Freud based his stages of personality development on *psychosexual phases*; these phases are determined by the pleasure-seeking component of the personality within the limitations of the environment. Erikson based his stages on *developmental tasks*, which are physical or cognitive skills that a person must accomplish during a particular age period in order for the personality to continue developing.

Study the chart at the end of this assignment sheet, then answer the following questions. Write the number of the correct answer in each blank.

_____A. Erikson bases his stages of personality development on ____________.

1. Cognitive development
2. Developmental tasks
3. Individual differences
4. Psychosexual phases

_____B. The two stages of personality development seen in the infant are ____________.

1. Autonomy and basic trust
2. Basic trust and the oral phase
3. Basic trust and the phallic phase
4. Initiative and the latent phase

_____C. Growth characteristics of the toddler include ____________.

1. Changing moods rapidly, having six teeth: four above, two below
2. Completing toilet training, having short attention span
3. Having a full set of deciduous teeth, tripling birth weight
4. Rebelling against restrictions, starting to develop secondary sex characteristics

_____D. The stages of personality development in adolescence are ____________.

1. Identity and adolescence
2. Industry and adolescence
3. Initiative and adolescence
4. Intimacy and adulthood

_____E. Growth characteristics of the preschool child include ____________.

1. Associating with members of the same sex
2. Changing moods rapidly
3. Developing secondary sex characteristics
4. Learning to play with others and using imagination.

ASSIGNMENT SHEET #1

_____F. The stages of personality development in the toddler are ____________.

1. Autonomy, anal-expulsive phase
2. Autonomy, latent phase
3. Autonomy, oral phase
4. Initiative, anal-expulsive phase

_____G. The stages of personality development in young adulthood are ____________.

1. Generativity, adulthood
2. Industry, integrity
3. Intimacy, adulthood
4. Intimacy, initiative

_____H. According to Erickson, at what stage of personality development does a person become concerned with what will be left for future generations?

1. Adolescence
2. Middle adulthood
3. Older adulthood
4. Young adulthood

_____I. The older adult is most concerned with ____________.

1. Generativity
2. Identity
3. Integrity
4. Intimacy

_____J. Which group is at the age of curiosity?

1. Infant
2. Preschool child
3. School-age child
4. Toddler

ASSIGNMENT SHEET #1

Growth and Personality Stages

Age	Growth Characteristic	Stages of Personality Development: Erikson—Developmental Tasks	Stages of Personality Development: Freud—Phases
Infancy Birth to 1 yr	Triples birth weight Stands alone for short periods Walks several steps before falling Has six teeth; four above, two below Understands much that is said Repeats words when prompted Shows emotion Reacts to moods of others	Basic trust (Infant develops trust in parents and then in others if infant feels accepted, wanted, and loved. Infant develops distrust if he/she feels unloved.)	Oral phase (Infant receives gratification orally, e.g., relief of hunger, thumb sucking; phase ends when infant is weaned.)
Toddler 1-3 yrs	Becomes more independent Explores curiously Wants to touch, taste, smell everything Rebels against restrictions Changes moods rapidly Has short attention span Completes toilet training Needs careful supervision for safety factors	Autonomy (Toddler wants to control own body and environment, wants to make decisions, and balances independence and conformity.)	Anal-expulsive phase (Toddler becomes interested in excretory functions, receives pleasure through elimination.)
Preschool 3-6 yrs	Becomes independent, very active Learns to play with others Needs to be supervised to prevent injuries Becomes more skilled in motor and coordination tasks Has longer attention span Imitates adult behavior Uses imagination but cannot distinguish between reality, fantasy Has full set of deciduous teeth	Initiative (Preschool child expands imagination, identifies with role of the parent of same sex as child.)	Phallic phase (Preschool child notices and is curious about difference between male and female bodies. Child masturbates.)

ASSIGNMENT SHEET #1

		Stages of Personality Development	
Age	**Growth Characteristic**	**Erikson—Developmental Tasks**	**Freud—Phases**
School Age 6-12 yrs	Needs to learn rules and accept directions Associates with members of the same sex May parrot attitudes of family and express prejudices Is insensitive to other's feelings Starts to develop secondary sex characteristics	Industry (School-age child needs to channel energy into constructive accomplishments. Child learns to compete with peers and to work beside and with others. Child develops pride if given praise. Child's interests become hobbies.)	Latent phase (School-age child has deeply ingrained personality traits and values.)
Adolescence 12-18 yrs	Experiences uncertainty at new emotions, changes in body appearance, and lack of internal control Begins to look forward to future vocation May experience conflict with caregiver Strives for independence, but still wants to be able to fall back on parents	Identity (Adolescent experiences many physical and emotional changes, is preoccupied with body image and acceptance into society, establishes concepts and values, chooses a lifestyle, may choose a career, and experiences an identity crisis and confusion if she/he fails to find own niche in the world.)	Adolescence (Same as Erickson's stage)
Young Adulthood 20-40 yrs	Chooses an occupation or career May marry and have children	Intimacy (Young adult has capacity to trust another in a committed relationship and has ability to give love, concern, compassion, and commitment to the well-being of another person.)	Adulthood—adolescence to senility (Adult is capable of assuming responsibility for own actions and should have mature, flexible, and stable personality.)

ASSIGNMENT SHEET #1

Age	Growth Characteristic	Stages of Personality Development Erikson—Developmental Tasks	 Freud—Phases
Middle Adulthood 40-60 yrs		Generativity (Adult in middle adulthood guides and develops the next generation and has concern about what will be left for them.)	
Older Adulthood		Integrity (Older adult has ability to live out life with dignity and a sense of order and meaning.)	

THE LIFE STAGES
UNIT II

ASSIGNMENT SHEET #2 — EVALUATE FEELINGS ABOUT DEATH

Americans are both surrounded by and isolated from death. On one hand, newspapers, television, and radio report deaths from accidents, illness, murder, famine, flood, and war. However, most people do not have regular contact with death.

Most people find the thought of their own deaths very frightening. As a result, the majority of people avoid thinking about the possibility of their own deaths. Every person, however, must eventually die. To avoid thinking about your own death is to avoid facing an event that ultimately will happen.

PART I

Describe your feelings about death by completing the following exercise. Circle the answer that best describes your feelings.

A. How often do you think about your own death?

Very frequently (at least once a day)

Frequently

Occasionally

Rarely (no more than once a year)

Very rarely or never

B. What does death mean to you?

The end; the final process of life

The beginning of a life after death; a transition, a new beginning

A joining of the spirit with a universal cosmic consciousness

A kind of endless sleep; rest and peace

Termination of this life but with survival of the spirit

Don't know

C. The sight of a dead body is

Horrifying to me

Natural

Pleasant

Unsettling

ASSIGNMENT SHEET #2

D. What aspect of your own death is the most distasteful to you?

I could no longer have any experiences

I am afraid of what might happen to my body after death

I am uncertain as to what might happen to me if there is a life after death

It would cause grief to my relatives and friends

All my plans and projects would come to an end

The process of dying might be painful

E. When you think of your own death, how do you feel?

Fearful

Discouraged

Depressed

Purposeless

Resolved, in relation to life

Pleased at being alive

F. If you have a choice, what kind of death would you prefer?

Tragic, violent death

Sudden, but not violent death

Quiet, dignified death

Death in a line of duty

Death after a great achievement

Suicide

Death by homicide

There is no "appropriate" kind of death

G. What are your thoughts about funerals?

Feel that they are very important for the bereaved

Tend to feel they are valuable

Am uncertain or undecided

Definitely do not think they are important for the bereaved

ASSIGNMENT SHEET #2

H. When has a member of your family, a close relative, or a very close friend died?

Within the past year

Within the past two years

Within the past five years

Over five years ago

Never

I. When you were a small child, how was death talked about in your family?

Openly

Guardedly

Among the adults

Not talked about

Cannot remember

J. How often have you been in a situation in which you seriously thought you might die?

Never

Once or twice

Several times

Many times

K. How do you think your attitudes about death were developed? ______________________

____

____

____

____

____

____

____

____

____

ASSIGNMENT SHEET #2

PART II

A. Write a statement of no more than fifty words about death.

EXAMPLES: Explain how you feel about your dying, or how you feel about another person's dying.

B. What emotions about death does your statement reveal?

ASSIGNMENT SHEET #2

C. Did you find it easy or hard to write your statement? ____________________

Explain your answer. ____________________

PART III

Reading an obituary or death notices helps people feel the reality of death.

A. Provide information for your own obituary.

____________________, age ____________________

died yesterday from (cause and manner) ____________________

(He or She) is survived by ____________________

At the time of death, (he or she) was working on becoming ____________________

(He or She) made contributions in the area of ____________________

(He or She) will be honored for ____________________

(He or She) always hoped ____________________

The body will be ____________________

ASSIGNMENT SHEET #2

B. Was completing the obituary easier or harder than writing about death from Part II of this assignment?

Explain your answer. ______________________________

____

C. Does your obituary provide an accurate reflection of your life? ______________

____

Explain your answer. ______________________________

____

____

SOCIAL HEALTH
UNIT III

UNIT OBJECTIVE

After completing this unit, the student should be able to identify family types, sexually transmitted diseases, methods of contraception, types of child abuse, and types of chemical abuse. The student will show this ability by completing the unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match to their correct definitions terms associated with social health.
2. List types of family organization.
3. Match types of families to their correct definitions.
4. Distinguish between characteristics of love and infatuation.
5. Match types of intimate relationships to their correct definitions.
6. Match methods of contraception to their correct descriptions.
7. List types of responsibilities that accompany the decision to become sexually active.
8. Select from a list consequences related to teenage pregnancies.
9. Match to their correct definitions terms associated with sexually transmitted diseases.
10. Describe common sexually transmitted diseases by naming their signs and symptoms and their treatments.
11. List the main types of child abuse.
12. List possible physical results of substance abuse.
13. Select from a list other problems related to substance abuse.
14. Match types and classes of drugs to their correct effects.

SOCIAL HEALTH
UNIT III

INFORMATION SHEET

I. Terms and definitions

A. **Contraception** — Process or technique for the prevention of pregnancy

B. **Drug abuse** — Use of a drug to the extent that it interferes with health, occupational, or social adjustment

C. **Drug addiction** — Physiological or psychological dependence on a drug

D. **Drug misuse** — Taking of a drug for its intended purpose but not in the appropriate amount, frequency, strength, or manner

E. **Emancipation of minors** — Term that recognizes the adult roles of minors who are sixteen years old and do not live with their parents; these minors can seek medical care without parental consent

(NOTE: Any female who has been pregnant, regardless of her age, may get contraception counseling at the state health department. In addition, the state health department will treat anyone for sexually transmitted diseases, regardless of age, and without parental consent.)

F. **Euphoria** — Feeling of vigor, well-being, or high spirits

G. **Family** — Two or more persons who are committed to each other and who share resources, responsibility for decisions, values, and goals

H. **Infatuation** — Strong attraction that may begin and end quickly

I. **Intimacy** — Establishment of close, stable relationships with others

J. **Sexually transmitted diseases** — Diseases transmitted primarily through sexual contact; venereal diseases

II. Types of family organization

(NOTE: Family organization indicates who is responsible for the majority of family decisions.)

A. Patriarchal — Father makes most decisions

B. Matriarchal — Mother makes most decisions

C. Equalitarian — Both parents share decisions

(NOTE: In families with both parents working outside the home, children often begin to share in decisions and responsibilities at an early age.)

INFORMATION SHEET

III. Types of families

A. Extended — Several related generations living under one roof

(NOTE: This type of family was more common in the past when grandparents lived with a father, mother, and children; the grandparents helped rear the children.)

B. Nuclear — Two parents living together with their child or children

(NOTE: Although this type of family has been the common ideal in American society, the number of nuclear families continues to decline.)

C. Single-parent — One parent living with child or children

(NOTE: Mainly because of the high divorce rate, the number of single-parent families has increased. Most single-parent families are headed by the mother, but it is becoming more common and more acceptable for a father to raise his children.)

D. Cooperative — Several families who maintain private living spaces and who at the same time have access to a larger family experience through sharing selected living spaces and certain activities

E. Communal — Several related or nonrelated families living together in one large house or on the same piece of land

F. Blended or reconstituted — Remarried parent and stepparent living with child or children

IV. Characteristics of love and infatuation

(NOTE: A young person who has not experienced many of the feelings related to being involved with another person may have difficulty distinguishing the different feelings. Careful thought is required before a decision is made that could affect the rest of a person's life.)

A. Love

1. Feeling of strong personal attachment
2. Commitment
3. Concern about welfare of other person
4. Slow and steady growth
5. Physical attraction

   (NOTE: Physical attraction is only one part of the relationship.)

6. Awareness of other person's faults, but ability to accept them as part of the total personality

INFORMATION SHEET

7. Willingness of both partners to give generously of themselves

8. Unselfishness

B. Infatuation

(NOTE: The fact that a relationship starts out as infatuation does not mean that it is doomed. Infatuation does not prevent a relationship from turning into love.)

1. Engulfing, selfish feelings

2. Concern for self

3. No growth; attraction quickly dies

4. Physical attraction

5. Overlooking undesirable traits

6. Seeking rewards, but giving little in return

7. Selfishness

V. Types of intimate relationships

(NOTE: Developing intimate relationships is important. One can develop relationships at different levels in each of the following areas.)

A. Intellectual intimacy — Relationship in which people base their relationship on exchange of words and ideas

EXAMPLE: They may discuss the new television programs or the senatorial election.

B. Physical intimacy — Relationship in which people feel comfortable with their mutual closeness and may touch or caress each other

(NOTE: Many people think that physical intimacy is only sexual. However, physical intimacy includes many kinds of physical expression.)

EXAMPLE: Jim and Sue walk hand in hand because they have become close friends.

C. Emotional intimacy — Relationship in which people are able to be completely natural with each other and show their true feelings

(NOTE: Emotional intimacy allows people to lower their social masks and get rid of their defenses.)

INFORMATION SHEET

VI. Methods of contraception

(NOTE: Some factors to consider when selecting a method of birth control include safety, effectiveness, convenience, cost, and personal preference.)

A. Nonprescriptive

(NOTE: Nonprescriptive birth control methods are generally not as effective in protecting against pregnancy as those methods prescribed by a doctor.)

1. Abstinence — Avoiding sex entirely

   (NOTE: Of course this method is 100 percent effective in preventing pregnancy.)

2. Condom — Cover worn over the erect penis to trap semen so that no sperm enter the vagina

   (NOTE: The condom is inexpensive, widely available, easy to carry and use, and has no side effects. The condom is the only contraceptive that protects against venereal disease.)

3. Chemical barrier (spermicide) — Foam, cream, or jelly that is inserted into the vagina and contains chemicals that immobilize and kill sperm

   (NOTE: Chemical barrier contraceptives are inexpensive and readily available. Feminine hygiene products are sometimes confused with chemical barrier contraceptives. Feminine hygiene products are only cleansers and deodorants and *not* a method of birth control. Also, douching is not to be considered a method of birth control.)

4. Rhythm — Refraining from intercourse during the portion of the female reproductive cycle when the egg is available for fertilization

   (NOTE: The rhythm method is not reliable unless the female has a very regular menstrual cycle.)

5. Withdrawal — Male withdraws his penis before ejaculation

   (NOTE: This method is very unreliable because it depends on the male's not ejaculating in the vagina or near the pubis or thighs.)

B. Prescriptive

1. Oral contraceptive (the Pill) — Synthetic hormones that prevent ovulation or alter the uterine lining so that pregnancy does not occur

2. Intrauterine device (IUD) — Device placed within the uterus to prevent the fertilized egg from attaching to the uterine wall

   (NOTE: IUDs must be inserted by a doctor.)

3. Diaphragm — Thin rubber cup that fits over the cervix to block the sperm from reaching the egg

   (NOTE: A diaphragm must be used with a spermicide.)

INFORMATION SHEET

C. Surgical

(NOTE: Surgical sterilization is 99.9 percent effective in birth control. Although some surgical techniques have been perfected for reversing the vasectomy and the tubal ligation, both forms of birth control should be considered permanent.)

1. Vasectomy — Operation for males whereby the tubes that carry the sperm to the penis are cut and tied
2. Tubal ligation — Operation for females whereby the Fallopian tubes are tied, cut, or sealed to prevent the egg's traveling through the tube to the uterus

VII. Responsibilities that accompany the decision to become sexually active

A. To yourself

1. Maintain your own moral standards

   (NOTE: If your moral standards tell you that sexual activity is wrong before marriage, the decision to become sexually active will result in feelings of guilt.)

2. Do not have intercourse with someone who has a sexually transmitted disease

B. To your partner

1. Do not use sex to "hold" a dating partner or to be popular
2. Be honest about contraception use
3. Tell your partner if you have a sexually transmitted disease

   (NOTE: If you have a sexually transmitted disease, it is your responsibility *not to transmit it*.)

C. To a possible child

(NOTE: Accidental pregnancy is irresponsible.)

1. Be ready to assume the responsibility of pregnancy

   (NOTE: The responsibilities of pregnancy mean health care, a change in life-style, and the possibility of leaving school or not being able to pursue a chosen career.)

2. Be able to support a child with money and love

VIII. Consequences related to teenage pregnancies

(NOTE: There are exceptions to each problem related to teenage pregnancy. There are many couples who marry as teenagers and have very successful marriages.)

A. Marriage may be forced to occur at a time not planned

(NOTE: The beautiful wedding that had been planned at one time may no longer seem appropriate, or there may be no time for planning.)

INFORMATION SHEET

B. The mother may have to decide whether to raise the child alone or to give it up for adoption

C. Couple may be faced with the overwhelming expenses of having a baby

(NOTE: In many cases, the initial cost of a pregnancy for low-income couples is paid by a social welfare department. Welfare departments are funded by tax dollars.)

D. Individual goals set by the couple may no longer be attainable

(NOTE: Teenage parents are less likely to attain educational goals, more likely to have lower income and occupational status, and more likely to go on welfare.)

E. In-law relationships may be marred

(NOTE: The parents of the couple may be resentful toward their child's marriage partner for having brought about a marriage they did not want or viewed as too early.)

F. Couple may retain resentment for each other throughout their married relationship

(NOTE: Often, the couple is not compatible enough for marriage.)

G. A child may be born with birth defects

H. Possibility of child abuse may be increased

IX. Terms and definitions associated with sexually transmitted diseases

A. **Alopecia** — Hair loss, baldness

B. **Arthritis** — Inflammation of the joints

C. **Condyloma** — Wartlike growth

D. **Endocarditis** — Abnormal condition that affects the endocardium and the heart valves

E. **Gumma** — Tumorlike mass of granulation tissue; a characteristic of tertiary syphilis

F. **Meningitis** — Any infection or inflammation of the membranes covering the brain and spinal cord

G. **Purulent** — Containing pus

H. **Serology** — Laboratory test done on blood serum for evidence of infection

I. **Vesicle** — Blister

INFORMATION SHEET

X. Common sexually transmitted diseases (Table 1)

(NOTE: These disease are transmitted primarily through sexual contact.)

TABLE 1

Disease	Signs and Symptoms	Treatment
Gonorrhea	*Female* No symptoms in early stages Menstrual problems Pain as infection spreads upward Sterility *Male* Burning and pain on urination Yellowish purulent discharge Pain as infection spreads upward Sterility	Antibiotics
Syphilis	*Primary stage* — 3 weeks after infection Painless lesion (chancre) on genitals, nipple, or mouth Positive serology *Secondary stage* — 6 weeks after initial infection Headache Enlarged lymph nodes Skin rash Malaise (weakness) Sore throat Alopecia *Tertiary (third and potentially life-threatening) stage* Gummas in skin, bone, liver, larynx, and testes Endocarditis Arthritis Meningitis Blindness	Antibiotics in the first two stages, not usually effective in tertiary stage

INFORMATION SHEET

TABLE 1

Disease	Signs and Symptoms	Treatment
Herpesvirus II (Genital herpes)	Fluid-filled vesicles on cervix, genitals Fever Malaise Recurring attacks	None (NOTE: Only the symptoms can be treated.)
Acquired Immune Deficiency Syndrome (AIDS)	Fatigue Fever Weight loss Swollen glands Loss of appetite Dry cough Persistent diarrhea Extreme susceptibility to diseases Kaposi's sarcoma Pneumocystis carinii pneumonia (NOTE: This disease has a 40 percent mortality rate and has been linked to homosexuals, Haitians, drug abusers, and people who need frequent blood transfusions.)	Symptomatic
Nonspecific urethritis	Burning upon urination Itching Penile or vaginal discharge	Antibiotics

XI. Types of child abuse

(NOTE: Victims of all types of child abuse will need support and counseling to prevent adjustment problems in adulthood.)

A. Physical abuse

(NOTE: Physical abuse is any physical harm to the child, harm that can range from minor injuries to life-threatening conditions.)

EXAMPLES: Injuries such as burns, fractures, lacerations, or abrasions
Neglect such as lack of proper food, clothing, or shelter; lack of physical contact

INFORMATION SHEET

B. Emotional abuse

(NOTE: This may be the most difficult type of abuse to diagnose because the scars are not visible.)

EXAMPLES: Verbal abuse such as constantly bringing up the child's shortcomings or making the child feel stupid, ugly, unwanted, or unlovable
Neglect such as lack of concern for the child's welfare, rejection of child; lack of physical contact

C. Sexual abuse

(NOTE: Sexual abuse is the exploitation of a child for sexual gratification of an adult. The consequences of sexual abuse are far-reaching and will affect the child as an adult. Statistics indicate that as many as one-sixth of the adults in this country were childhood victims of sexual abuse.)

EXAMPLES: Nontouching offenses such as verbal sexual stimulation, obscene phone calls, exhibitionism, forcing the child to watch sexual intercourse
Touching offenses such as fondling, rape, prostitution

XII. Possible physical results of substance abuse

(NOTE: The term *substance abuse* applies to drug abuse and misuse and to alcohol, caffeine, and nicotine abuse.)

A. Death

(NOTE: Deaths from substance abuse can occur in different ways. Tragically, death is not limited to the abuser; innocent bystanders may also become victims.)

EXAMPLES: Fatal allergic reaction to a drug, even on the first use, even with a small amount
Lethal combination of certain drugs and alcohol
Fatal traffic accidents resulting from drivers impaired with altered reaction times

B. Serious injury

C. Physical or mental impairment

(NOTE: While in a drug-induced state, a substance abuser may act contrary to his or her normal behavior and may bring physical harm to others.)

EXAMPLES: Slowed reaction time
Hyperactivity
Slurred speech
Amotivational syndrome
Emphysema
Arteriosclerosis
Cirrhosis

INFORMATION SHEET

D. Physical or psychological addiction

(NOTE: In physical addiction, the body craves the chemical. In psychological addiction, the person feels that she or he cannot do without the chemical.)

E. Birth defects

(NOTE: Any chemical can be potentially dangerous to the unborn. Many chemicals, especially in the first trimester, even before the pregnancy is confirmed, can cause serious birth defects or cause the newborn to be addicted.)

EXAMPLES: Low birth weight, respiratory distress syndrome

F. Increased tolerance for chemical

(NOTE: With an increased tolerance for a particular chemical, greater quantities of it are needed to achieve the same level of response.)

G. Unpleasant withdrawal symptoms

(NOTE: With some chemicals, withdrawal symptoms can cause convulsions, coma, or death.)

EXAMPLE: Delirium tremens (DTs)

XIII. Other problems related to substance abuse

(NOTE: The best defense against substance abuse is saying "no.")

A. Certain substances may be illegal to possess

B. Content of illegal drugs is not controlled

(NOTE: There is no quality control and no sure way to know what is being purchased.)

C. Price of illegal drugs is not controlled

D. Some users commit crimes to support chemical habit

(NOTE: Heavy chemical use is very expensive. Many addicts steal, sell drugs, or become prostitutes to support their habits. To an addict, there comes a time when nothing matters except the drug.)

E. Relationships and career may suffer

INFORMATION SHEET

F. Prescription drugs may be unintentionally misused

(NOTE: Some people may misuse prescription drugs obtained legally; the physical effects of that misuse may be the same as in drug abuse. Use prescription drugs exactly as instructed by physician and pharmacist. Watch for signs of side effects and report them to your physician.)

XIV. Types and classes of drugs and their effects

(NOTE: A person who becomes an alcoholic or a drug addict should be treated like anyone else who has an illness or disease. The only difference is that this person could have made the decision not to take the drug in the first place.)

A. Nicotine — Acts as a stimulant by speeding heart and breathing rates while at the same time cutting appetite

(NOTE: Nicotine is one of the most widely used drugs, and is found in the leaves of the tobacco plant.)

B. Alcohol — Acts as a depressant by slowing down body processes such as muscle control; causes slurred speech and stumbling

(NOTE: Many people think that alcohol is a stimulant because they feel excited or emotional at first.)

C. Depressant — Has a calming effect by slowing down body's entire system

EXAMPLES: Barbiturates, tranquilizers, sedatives, alcohol

D. Stimulant — Speeds up central nervous system; gives a feeling of increased mental power that often leads to overestimation of power; give a feeling of euphoria

EXAMPLES: Cocaine, amphetamines, caffeine, nicotine

E. Narcotic — Gives a false feeling of relief from tension; reduces hunger drive and sex drive; tolerance to the drug quickly builds

(NOTE: These drugs are highly addictive.)

EXAMPLES: Heroin, opium, codeine

F. Hallucinogen — Causes both physical and mental reactions; mental changes cannot be predicted; reality and perception are distorted in unusual and unlikely ways

(NOTE: A hallucinogen causes the user to have hallucinations.)

EXAMPLES: LSD, peyote, mescaline, PCP (angel dust)

SOCIAL HEALTH
UNIT III

ASSIGNMENT SHEET #1 — ASSESS PERSONAL EXPECTATIONS OF FAMILY LIFE

NAME ____

Personal experiences influence a person's expectations of family life. Since everyone has different personal experiences, ideas about family life will be different.

PART I

Read the rhyme below and think about what *family* means to you. Use your own paper and supplies that are available to create a picture that expresses your ideas and feelings about family.

What is a family, what can it be
Is it my mother, my father and me?

Or is it one parent, a son and his dog,
Living in Frisco, a place of dense fog?

Perhaps it's a mother, her husband, his kids,
In a split-level ranch north of Kalamazids?

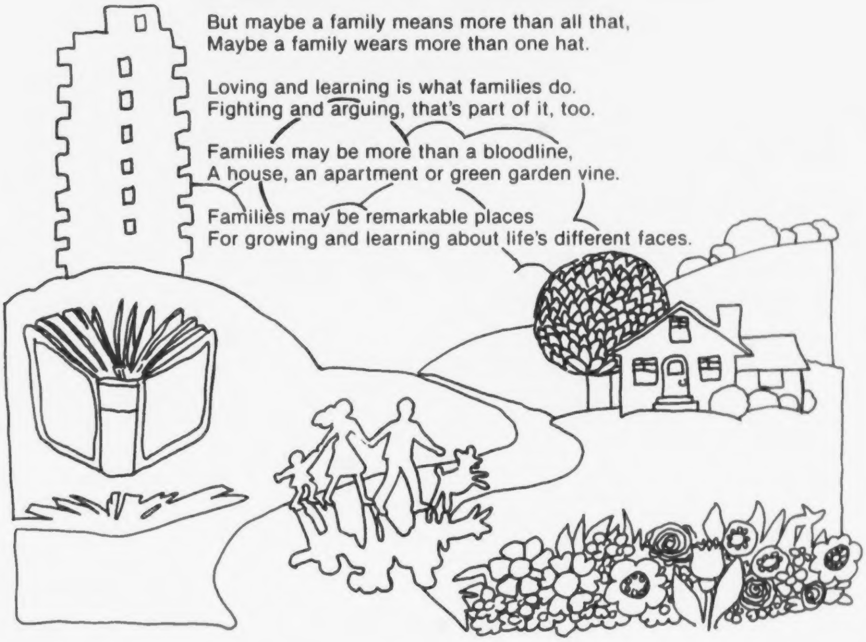
Could it be just a couple—the MacDonalds next door—
Who live way up on the seventeenth floor?

But maybe a family means more than all that,
Maybe a family wears more than one hat.

Loving and learning is what families do.
Fighting and arguing, that's part of it, too.

Families may be more than a bloodline,
A house, an apartment or green garden vine.

Families may be remarkable places
For growing and learning about life's different faces.



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ASSIGNMENT SHEET #1

PART II

The family's functions have changed over time, and its functions will probably continue to change. The family is a system in process rather than a rigid, unchanging system.

A. Create in sentence form your future expectations about family life. Complete the following sentences.

1. To me *family* means ____________________
____
2. The most important thing about life in my family is ____________________
____
3. Living in a family can be fun when ____________________
____
4. Living in a family can be difficult when ____________________
____
5. Families teach you to ____________________
____
6. If we did not have families, ____________________
____
7. When I am older, I want my family to include ____________________
____
8. I want my future family to live ____________________
____
because ____________________
9. As an adult member of my future family, I would value ____________________
____
because ____________________

ASSIGNMENT SHEET #1

10. If I became a parent, I would want my children to ____________________

____

11. I would teach my children to ____________________

____

B. How might your family life as a child influence your family life as an adult?

____

____

____

____

____

C. Do you think that family values change from one generation to another, or do they stay the same? Explain your answer.

____

____

____

____

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SOCIAL HEALTH
UNIT III

ASSIGNMENT SHEET #2 — DETERMINE CHALLENGES FACED BY TYPES OF FAMILIES

NAME ____

The family is still the most efficient way available to nurture and provide care for members of society. The family has been called the "shock absorber" of society. It is a place where bruised and battered individuals return after doing battle in the world.

PART I

Identify types of families represented in the following pictures, and share some of your feelings about each family.

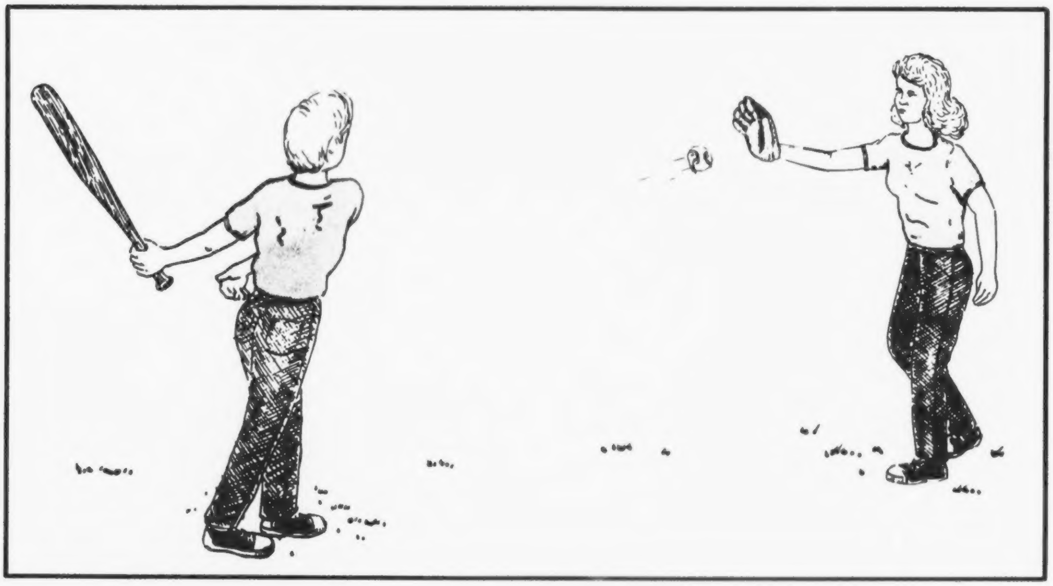
A. Type of family — ______________________________________

What are the biggest challenges that you think this family may have to face?

____

____

____



ASSIGNMENT SHEET #2

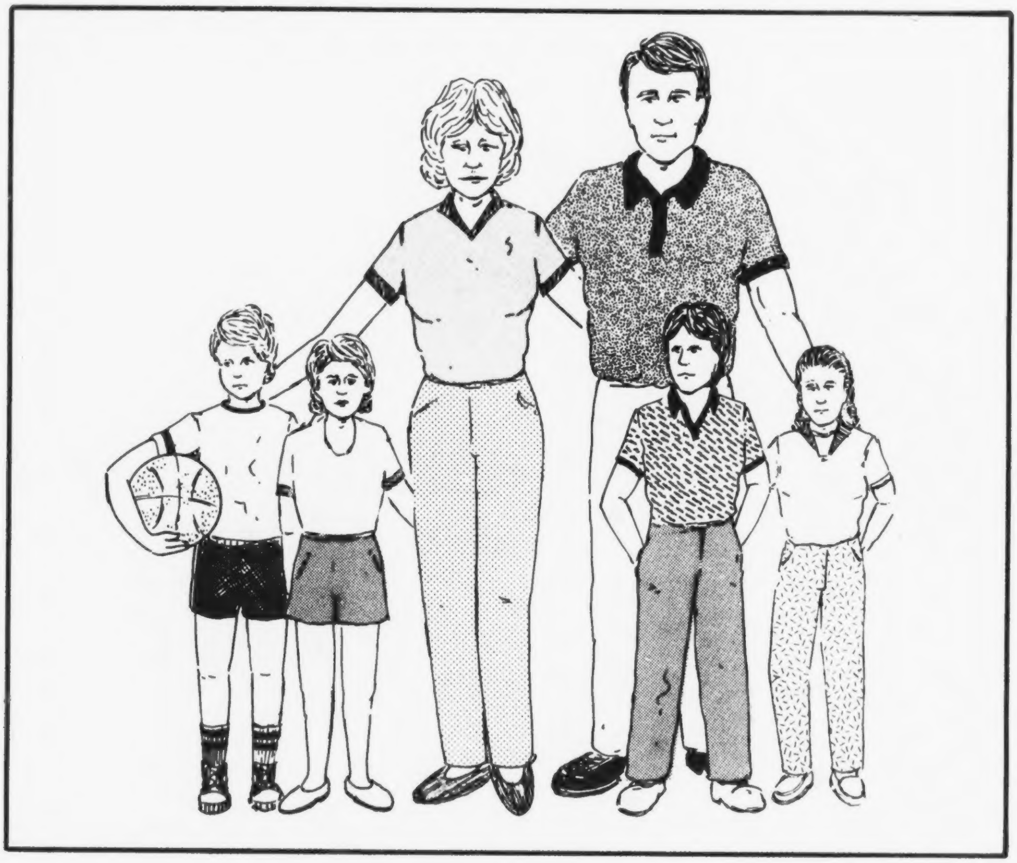
B. Type of family — ______________________________

What are the biggest challenges that you think this family may have to face?

____

____

____



ASSIGNMENT SHEET #2

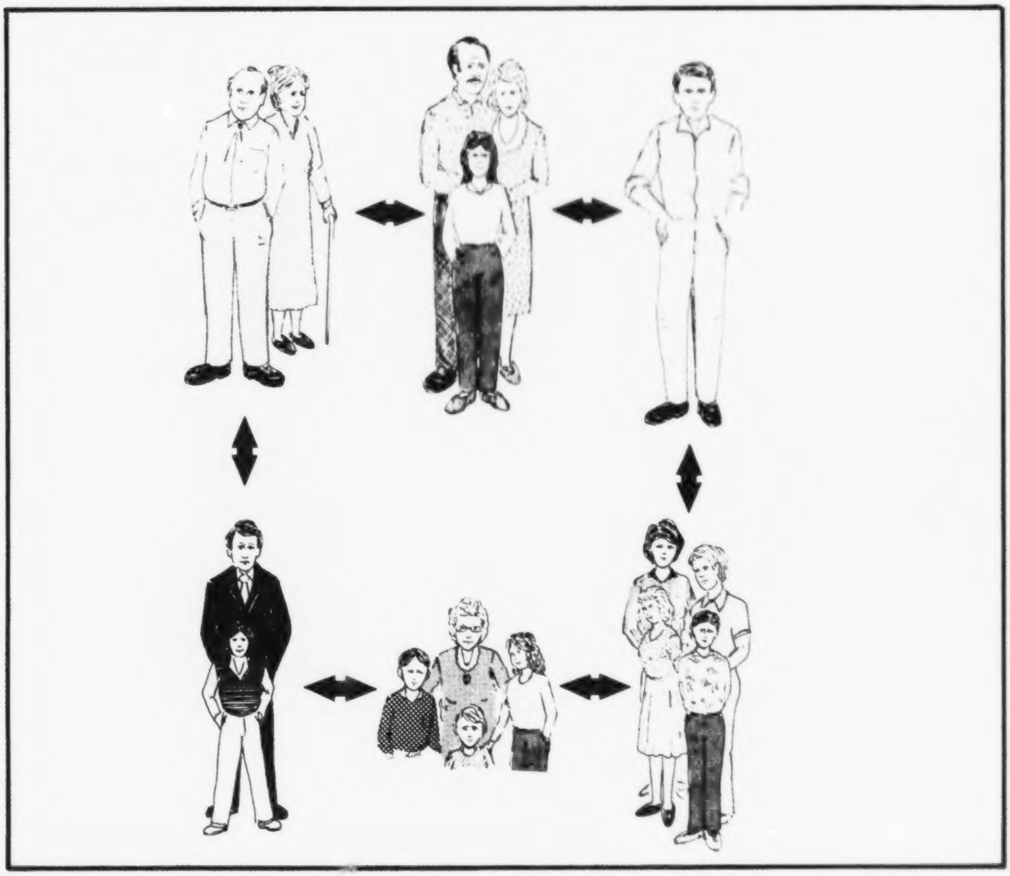
C. Type of family — ______________________________

What are the biggest challenges that you think this family may have to face?

____

____

____



ASSIGNMENT SHEET #2

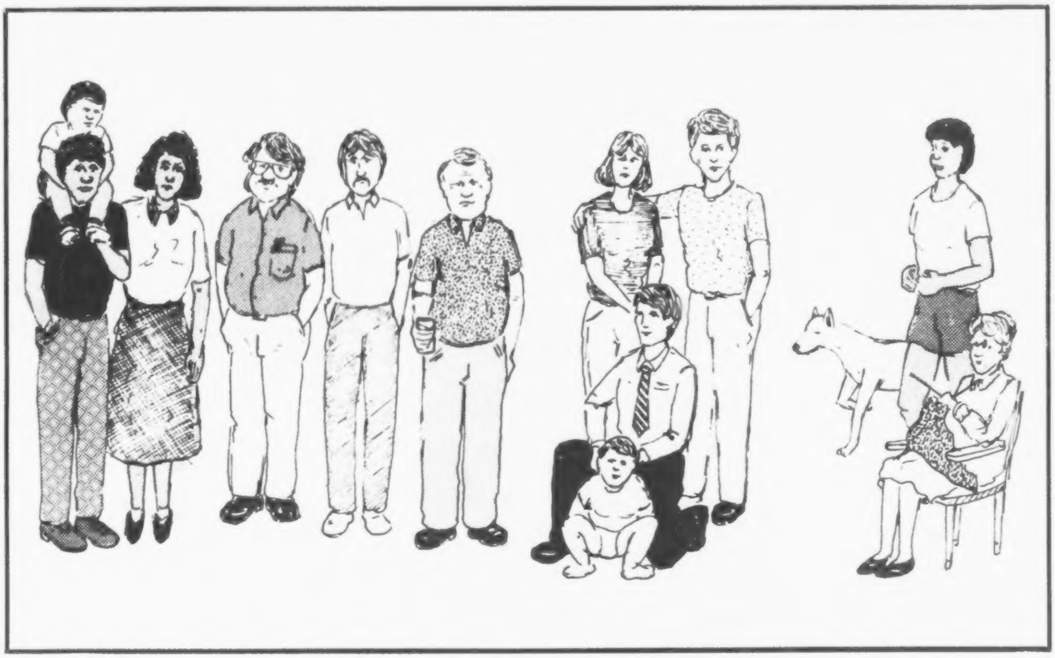
D. Type of family — ______________________________

What are the biggest challenges that you think this family may have to face?

____

____

____



ASSIGNMENT SHEET #2

E. Type of family — ______________________________

What are the biggest challenges that you think this family may have to face?

____

____

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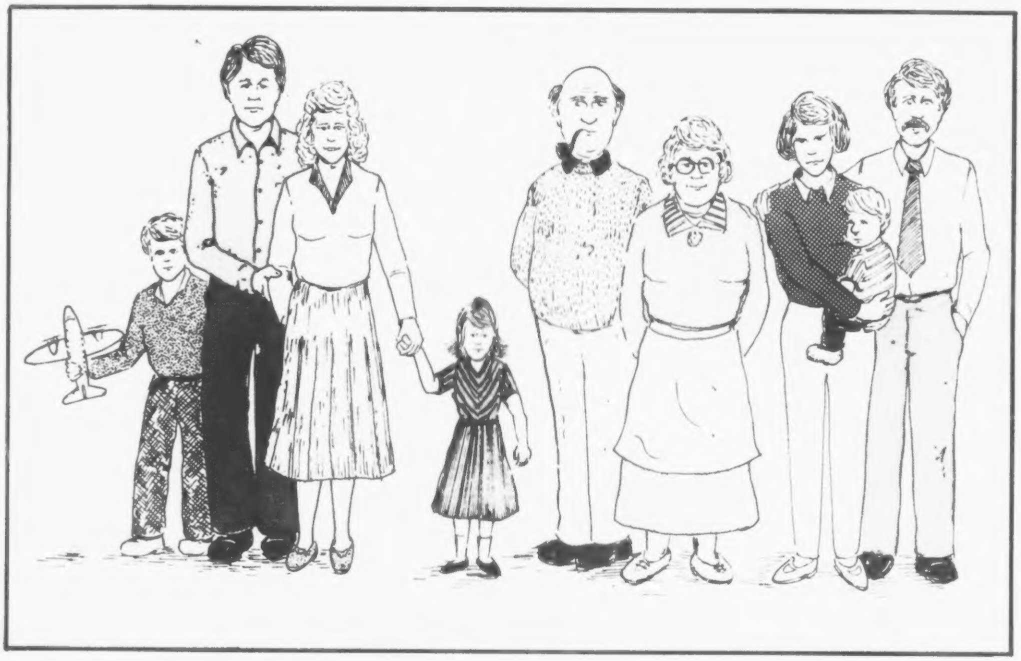
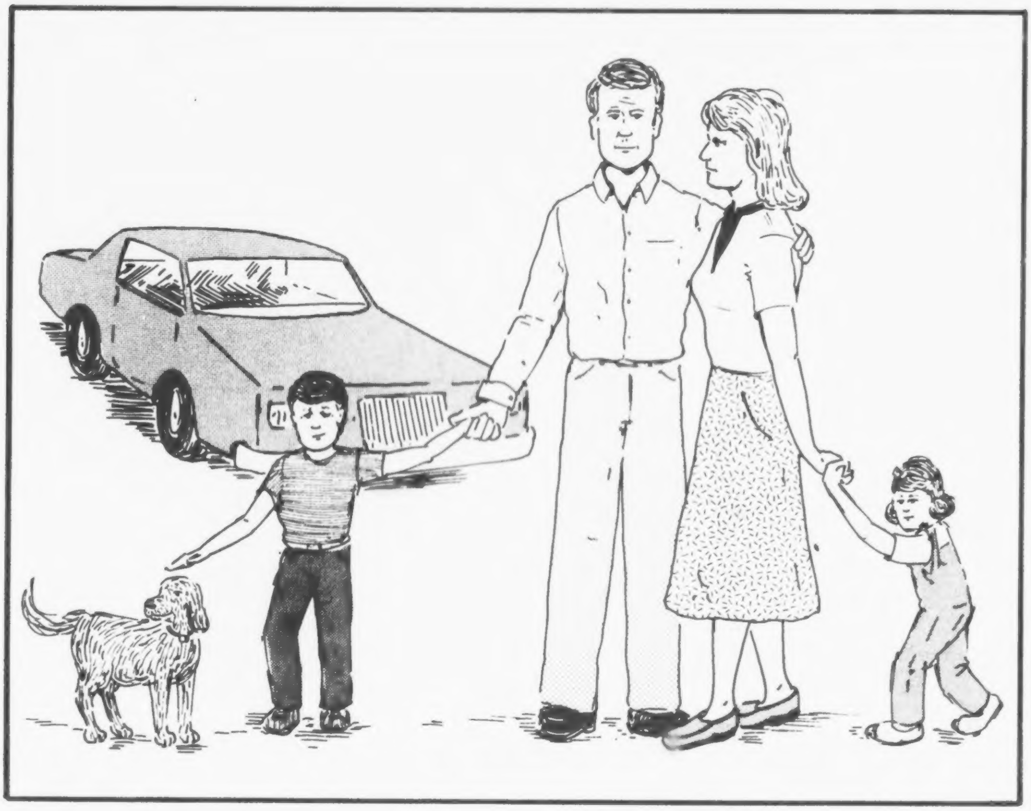


ASSIGNMENT SHEET #2

F. Type of family —

What are the biggest challenges that you think this family may have to face?



ASSIGNMENT SHEET #2

PART II

There are many types of families. Each type of family is able to meet its members' needs in different ways.

A. List the different types of families that you know to exist in your community.

____

____

____

B. Of the different types of families discussed in this assignment sheet, which type do you think offers the most advantages to its members? List the family type and three of its advantages.

Family type — ________________________________

1. ______________________________________
   ____
2. ______________________________________
   ____
3. ______________________________________
   ____

SOCIAL HEALTH
UNIT III

ASSIGNMENT SHEET #3 — ASSESS TASK ASSIGNMENTS

NAME ____

The type of family and its structure affect how household tasks are completed. To compare ways that families assign tasks, complete the chart in Part I and answer the questions in Part II.

PART I

A. Read the list of household tasks on the chart on the next page.

B. Family A consists of a mother, a father, a teenage son and daughter, and a seven-year-old son. Indicate with a check (✓) the family member(s) you think should be responsible for each task in this family.

C. Repeat this exercise for Family B. This family consists of a single parent and a teenage daughter and son.

   1. First, assign tasks by assuming that Family B is headed by a mother.

   2. Next, using a different colored pen, assign tasks by assuming that Family B is headed by a father.

D. Now look at Family C. Use different marks (–, ×, o, +) or colors to indicate task assignment(s) for one or more of the following combinations: mother and a teenage daughter, mother and a teenage son, father and a teenage daughter, father and a teenage son.

ASSIGNMENT SHEET #3

	FAMILY A					FAMILY B			FAMILY C	
WHO SHOULD	Mother	Father	Teenage Son	Teenage Daughter	Seven-Year-Old Son	Single Mother/Father	Teenage Son	Teenage Daughter	Single Mother/Father	Teenage Daughter/Son
Wash the dishes?										
Mow the lawn?										
Wash the car?										
Take out the trash?										
Weed the garden?										
Dust and vacuum?										
Water the lawn?										
Cook the meals?										
Clean the bathroom?										
Iron the clothes?										
Shop for groceries?										
Clean the garage?										
Pay the bills?										
Do the laundry?										
Change the beds?										
Balance the checkbook?										
Refinish/mend furniture?										
Change the car oil?										
Mop the floors?										
Attend school functions?										
Be the family taxi driver?										
Stay home with an ill child?										
Do the income tax report?										

$
BREAD
MILK
OIL

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ASSIGNMENT SHEET #3

PART II

Answer the following questions about the task assignments you made in Part I.

A. How did you decide who should do what?

B. Do you see any patterns in the types of tasks you assigned to mothers and daughters? To fathers and sons? Explain.

C. If you were to ask your grandparent—or someone who is approximately of your grandparent's age—to mark the chart, how do you think his or her task assignments would differ from those assignments that you made. Why?

D. Describe what you learned about assigning family tasks.

SOCIAL HEALTH
UNIT III

ASSIGNMENT SHEET #4 — RESPOND TO DECISION-MAKING SITUATIONS

NAME ____

Every hour of your life you make decisions. You made a decision about what to wear today. You made a decision about your part-time job, and a decision about how much time to spend watching television.

Some decisions should take only a few minutes to make, while others should be given a great deal of thought. What to order from a menu should take only a few minutes, but what classes to take next year at school should be given more thought.

Making a mature decision involves five clearly defined steps:

1. Identify the exact decision to be made
2. Identify the options and their possible consequences
3. Weigh the choices
4. Make the choice
5. Take responsibility for decision

PART I

Read the following situations and respond as if you were giving advice to a friend. Remember, it is important to make a decision that is workable for you.

(NOTE: The "advice giver" in the following situations should consider the other person's personality traits, and give only advice that is in the other person's best interest.)

A. Two weeks before the prom, Jim asks your friend Lavern to go to the prom with him. She is not really excited about going with Jim, but at least she will have a date. Three days later, the person she would really like to go to the prom with calls and asks her to the prom. Lavern does not know what to do. She has come to you for advice.

What advice would you give Lavern? Why?

____

____

____

____

____

ASSIGNMENT SHEET #4

B. The television movie that your kid brother has been waiting to see for months will be shown tonight. Your brother comes home from school very upset. During history class his teacher has announced that the nine week's test has been rescheduled for the next day. Your brother asks you what he should do.

What advice would you give your brother? Why?

____

____

____

____

____

C. Your friend Seth asks you what you think he should do. One of his girlfriends is trying to talk him into going on an overnight camping trip with a group from school. Since his parents are out of town, his friend says they will never know.

What advice would you give Seth? Why?

____

____

____

____

____

D. Your friend Sally has a problem. She has been invited to a lake party by the boy she has been wanting to date for months. He has promised her a good time because there will be plenty of beer and other good "stuff." Sally wants to go, but wants your advice on what you think she should do.

What advice would you give to Sally? Why?

____

____

____

____

____

ASSIGNMENT SHEET #4

E. Your friend Pete comes to you with a problem. He has been offered marijuana by one of his friends.

What advice would you give to Pete? Why?

F. Your sixteen-year-old friend Patty comes to you for advice. Her boyfriend is trying to get her to have sexual intercourse. Patty does not know what to do. She has been dating him for about one month and really likes him a lot.

What advice would you give Patty? Why?

G. One member of the group that your friend Brad was with shoplifted tapes from the record department at the shopping center. Brad is worried.

What advice would you give to Brad? Why?

ASSIGNMENT SHEET #4

PART II

When making decisions, you should take into account everything that is involved. When you can weigh the probable outcome of your decision against your personal goals and values, you will be on the way toward reasoning.

Consider the situations for which you gave advice in Part I, and then answer the following questions.

A. Did you give advice in any of the situations that you would not want your parents to know about? ______________________________

If so, which situations and why? ______________________________

____

B. Did you advise a decision in any of the situations that could be emotionally or physically harmful?

List any decisions that would be emotionally harmful.

____

____

List any decisions that could be physically harmful.

____

____

C. Could any of the advice that you gave have a negative effect on a person's entire future?

If so, what advice and why?

____

____

____

D. Did you give advice that you would not be willing to receive?

Explain your answer. ______________________________

____

____

SOCIAL HEALTH
UNIT III

ASSIGNMENT SHEET #5 — DISTINGUISH BETWEEN LOVE AND INFATUATION

NAME ____

Infatuation is often mistaken for love. A young person who has not experienced either love or infatuation may have difficulty distinguishing between the two.

The definition of love mentions strength and lasting qualities; while, according to some definitions, infatuation is not love at all, but merely an imitation of the real thing. Infatuation may exaggerate the loved one's virtues and minimize his or her faults. Love is relatively steady and secure. Infatuation is hasty and changeable.

A. Describe your feelings about a particular relationship by checking each statement that describes how you feel about that relationship.

_____ I feel happiest when we are together	_____ I feel good even when we are apart
_____ I feel uneasy if my friend is alone with a cute member of the opposite sex	_____ I trust my friend even with members of the opposite sex
_____ I feel dreamy and unable to concentrate	_____ I feel energetic and purposeful
_____ We only enjoy each other's company when alone together	_____ We enjoy each other's company in the presence of others
_____ I feel weak and jittery	_____ I feel calm and contented
_____ I do the things that my friend likes to do	_____ We share common interests
_____ I feel nervous and fluttery when meeting my friend	_____ I feel at ease and comfortable
_____ My friend and I have different goals	_____ My friend and I have similar goals

Adapted with permission of Homemaking Research Laboratories, Tony, Wisconsin (800-255-9929).

ASSIGNMENT SHEET #5

_____ I care a great deal about how my friend looks	_____ I feel that the physical appearance of my friend is not really important
_____ I live for the present	_____ We plan jointly for the future
_____ When making plans, I think of my own needs and wants first	_____ When making plans, I think of my friend's needs and wants first
_____ I am not concerned with my friend's ideas	_____ I know and respect my friend's ideas
_____ Sometimes I feel ashamed of my friend	_____ I feel proud of my friend
_____ Sometimes I "put down" my friend in public	_____ I like to show my friend off
_____ I remember the instant when I fell in love	_____ I think that falling in love was a gradual thing for me
_____ I have difficulty explaining just what I love about my friend	_____ I am able to describe exactly why I love my friend

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B. Which column had the most checks, the left-hand column or the right-hand column?

____

(NOTE: The left-hand column indicates infatuation characteristics rather than those of a deep and lasting love. The main difference between infatuation and love is that love will form the basis of a long, lasting relationship; but, infatuation, while intense, often reaches a peak quickly and then burns itself out completely. Infatuation dies when the excitement fades. Love does not depend on such external factors.)

C. If two people who are merely infatuated married, what problems do you think they would encounter?

____

____

____

____

____

SOCIAL HEALTH
UNIT III

ASSIGNMENT SHEET #6 — RESPOND TO CASE STUDIES CONCERNING DECISIONS

NAME ____

Your values strongly influence your decisions, particularly those decisions concerning sexual behavior. You need to think about how you can cope with your sexual feelings, live by values that you think are important, and also meet your sexual responsibilities. You should also remember the risks of becoming heavily involved in sexual activity: guilt feelings, venereal disease, and pregnancy.

Respond to the following case studies.

Case Study #1

Jean has a deep affection for Buster and they hope to marry some day. She does not want to consider marriage for a long time because she feels that being married would make her educational goals much harder to attain. Buster has been trying to get Jean to make a sexual commitment to him. Now Buster says that if Jean will not have intercourse with him, he will start dating someone who cares enough for him to make him happy.

A. What do you think is the best activity for Jean? Why? ____________________

____

____

____

____

____

____

____

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____

____

____

____

ASSIGNMENT SHEET #6

Case Study #2

Eric has the belief that all people should make decisions regarding their life based on careful consideration of their own values and standards. Eric feels that couples should wait until marriage before having sex. Four weeks ago, Eric met Penny, the "girl of his dreams." Eric is tremendously attracted to Penny. Eric and Penny do not seem to have a lot of the same interests; but when they are together, their sexual attraction is very strong. It is easy to be with Penny because she is not shy and she encourages a lot of closeness.

While on a date last night, things got out of control as Eric and Penny were kissing and holding each other. They ended the evening having sexual intercourse. The next morning Eric felt very guilty and ashamed of himself because he had done something that he felt was wrong for him at this time in his life. He wondered if he had been a very responsible person to himself or to Penny.

B. What do you think Eric should do about his relationship with Penny? Why? __________

SOCIAL HEALTH
UNIT III

ASSIGNMENT SHEET #7 — CONSIDER SOLUTIONS TO CHILD ABUSE

NAME ____

Child abuse is a major problem, but what can you do about it? How can you tell if a child is abused? Why would parents hurt their own children? In this assignment sheet you will distinguish among types of child abuse and consider ways to stop the problem of child abuse.

A victim of child abuse may exhibit unusual behavior such as aggression, withdrawal, or a reluctance to go home. Less noticeable are psychological signs such as a seeming lack of emotion or a low self-esteem.

Most cases of child abuse are by a parent, but many children are abused by a relative or caregiver. The causes of child abuse include the following list:

- Emotional immaturity of parent
- Inability to accept parenthood
- Unrealistic expectations
- Abuse during abuser's own childhood
- Substance abuse
- Stress
- Distorted sense of discipline
- Mental instability

PART I

Distinguish among different types of child abuse. Write a "P" in the blanks before examples of physical abuse, an "E" before examples of emotional abuse, and an "S" in the blanks before examples of sexual abuse.

_____A. Mike is a six-year-old who is very thin and is not dressed appropriately for the weather. On the coldest days Mike wears jeans and a very light T-shirt; often he wears the same clothes for days on end. When the teacher questioned him regarding his nutritional intake, she found that Mike had lunch at school, and ate what he could find at home for supper.

_____B. Patricia is eighteen years old and has always done very well in school. Her younger sister does not have the ability to overachieve. Their parents have always told the younger sister how stupid she was, and if she thought anything about them, she would try harder at school.

_____C. Lisa has taken to wearing sunglasses to school. One day while in the restroom, Lisa takes off her glasses to wash her face; you notice that she has two black eyes.

_____D. When John bumped the grocery cart into a store display, his mother told him he had always been stupid and clumsy and wished he would watch where he was going.

ASSIGNMENT SHEET #7

_____E. Your friend Mary has confided in you that her uncle is babysitting while her parents are gone. She tells you that her uncle wants to watch her take off her clothes and bathe her. She feels very uncomfortable about this since she is twelve years old.

_____F. Young Adventures film company uses children as actors in pornographic films.

PART II

Child abuse is a major problem, but what can you do about it? Victims and abusers need help, but what kind? In this section you are asked to respond to several situations concerning abuse.

A. What should you do if you suspect a child is being abused?

B. What would you do if you were a parent and suspected that your child was being abused at a day-care center?

C. What would you do if you felt yourself losing your temper and about to hit your child?

SOCIAL HEALTH
UNIT III

ASSIGNMENT SHEET #8 — EXPLORE FEELINGS ABOUT DRUG ABUSE

NAME ______________________________

The entire area of drug use is surrounded by controversy. Just knowing the facts about a drug is not enough. An individual must be ready to make the decision to use drugs properly.

Explore your feelings about drug misuse and abuse by answering *yes* or *no* to the following questions.

A. _____ Do you think that taking drugs frequently could help solve your problems?

_____ Do you think that the effects of drugs could cause you to do something of which you would be ashamed?

_____ Do you think that you could handle drugs better than your friends could?

_____ Do any of your friends misuse or abuse drugs?

_____ If any of your friends misuse or abuse drugs, do they put pressure on you to abuse drugs?

_____ Does it make you angry when someone tells you the dangers of drug misuse?

_____ Have you ever seen the bad effects that drug misuse or abuse can have?

_____ Do you think that occasionally smoking a marijuana cigarette or occasionally getting drunk is okay?

B. Is drug abuse dangerous? ______________________________

Explain your answer. ______________________________

____

____

____

____

____

____

____

ASSIGNMENT SHEET #8

C. Think about the answers that you gave in A and B. Do you think that you can make the right decision about drug use in general? Explain your answer.

SOCIAL HEALTH
UNIT III

ASSIGNMENT SHEET #9 — RECORD DRUG-RELATED MEDIA MESSAGES

NAME ______________________________

Adolescent years are trying at best. You are establishing your self-confidence and becoming a secure person. There are many influences with which you must deal. Influences from your peer group and from the media are just a few. These influences can interfere with your ability to make decisions.

During the next twenty-four-hour period, record all the drug-related media messages that you receive. Record any media messages about liquor or over-the-counter drugs. Record messages about smoking, drinking, or abusing drugs as depicted by characters on television shows. Also record any drug-related messages that you see in magazines, newspapers, or on billboards.

A. Record drug-related messages that you received in the last twenty-four hours by completing the following chart.

Media	Type of Drug	Who Was Using the Drug?	Was There Peer Pressure to Use the Drug?
EXAMPLE: Television	Alcohol	Adults at a party	Yes

ASSIGNMENT SHEET #9

B. What television shows did you watch that had drug-related messages either in commercials or as part of the show?

1. Were the people sending these messages glamorous and surrounded by beautiful settings?
2. If so, why do you feel that they were put in these types of settings?

C. What different over-the-counter drugs were advertised?

1. Do you consider over-the-counter drugs to be dangerous?
2. Why or why not?

D. How many people did you see smoking during your observations?

E. How many did you see drinking alcoholic beverages?

F. Do you feel that the media is a big influence on drug use, misuse, and abuse?

Explain your answer.

COMMUNITY HEALTH
UNIT IV

UNIT OBJECTIVE

After completing this unit, the student should be able to classify agencies and organizations according to their voluntary or official capacities and name common problems that can occur in every community. The student should become knowledgeable about health agencies. This knowledge will be evidenced through completion of assignment sheets and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match terms associated with health agencies to their correct definitions.
2. Select services provided through family planning groups.
3. Select from a list services offered through a guidance clinic.
4. Discuss common problems that can occur in every community.
5. Research functions of a health organization or agency.
6. Research a current national health issue.
7. Formulate solutions to common community health problems.

COMMUNITY HEALTH
UNIT IV

INFORMATION SHEET

I. Terms and definitions

A. **Alcoholics Anonymous** — Voluntary organization made up of former alcoholics who help other alcoholics help themselves

(NOTE: Al-Anon is a group that works with families of alcoholics; Alateen is a group primarily for the children of alcoholics. Both groups strive to learn how to live with the alcoholic but not to cure him/her; only the alcoholic can decide to quit drinking. Check your telephone book for the local numbers of these or other groups that deal with drug abuse.)

B. **American Cancer Society** — Organization that educates the public and supports facilities for the detection, diagnosis, and treatment of cancer

(NOTE: Groups form through the American Cancer Society to work with specific problem areas. Such groups include Reach to Recovery, Laryngectomy Club, and the Ostomy Club.)

C. **Communicable** — Can be passed from one person to another by direct or indirect contact

D. **Department of Health and Human Services** — Official federal agency that sets up and directs programs to help improve the conditions of life for each individual

(NOTE: This department used to be called the Department of Health, Education, and Welfare [HEW].)

E. **Food and Drug Administration (FDA)** — Agency that administers and enforces many acts that promote purity and truthful, informative labeling of consumer products

EXAMPLES: Food, Drug and Cosmetic Act; Fair Packaging and Labeling Act;
Caustic Poison Act

F. **Immunization** — Method that protects a person from certain communicable diseases

(NOTE: Immunity can be natural or acquired, active or passive.)

G. **Local health department** — Agency that provides many community services such as immunizations, communicable disease reports, public health nursing, health education, environmental sanitation, and maternal and child health services

INFORMATION SHEET

H. **Medicare** — Government health insurance plan to aid people sixty-five or older

I. **Official/public agencies** — Agencies supported through public funds from government taxes and administered by appointees of the federal, state, or local government

J. **Public Health Service** — Agency that provides programs for research and gives grants to states for health services, provides training programs to improve health in local communities, and offers medical and psychiatric examinations

K. **Social and Rehabilitation Services** — Division of Health and Human Services, organized to set up programs to aid handicapped and disabled individuals

(NOTE: This agency sets up training programs to teach employable skills and health care to handicapped and disabled individuals. In addition, this agency fits rehabilitative equipment to individuals to give them greater independence and freedom of movement.)

L. **Social Security System** — National system to provide health, retirement, survivor's, and disability insurance that covers all people who work for a living outside the home

M. **State health department** — Agency that provides health education materials, including films, pamphlets, books, and folders on various health subjects

(NOTE: The state health department may be responsible for licensing embalmers, manufacturers of narcotics and other controlled drugs, hospitals, nursing homes, and other agencies.)

N. **Voluntary/private health agencies** — Organizations that receive support from sources such as United Way, donations, gifts, endowments, membership fees, and sometimes public funds

(NOTE: These agencies include the American Dietetic Association, American Medical Association, American Hospital Association and many others. They are usually administered by a board of directors who volunteer their services.)

O. **World Health Organization (WHO)** — Special agency of the United Nations that works throughout the world to raise health standards

(NOTE: Control of communicable diseases is WHO's main goal.)

II. Services provided through family planning groups

(NOTE: Most groups funded by an official agency will provide the following services free. Private agencies usually charge a fee based on the individual's income and family size.)

INFORMATION SHEET

- A. Physical examinations
- B. Contraception/birth control counseling
- C. Genetic counseling
- D. Referrals for sterilization
- E. Social services counseling

III. Services offered through a guidance clinic

- A. Individual counseling
- B. Marriage counseling
- C. Family counseling
- D. Group therapy
- E. Workshops for all ages
- F. Psychiatric testing

(NOTE: Clinics can be privately financed by the psychiatrists or psychologists, or they can be state funded. Many university psychology departments have free psychological/psychiatric clinics.)

IV. Common community health problems

A. Poor sanitation

(NOTE: Each community should have a water purification system, a safe sewage disposal system, and a system of checking restaurants' quality of food and health of its employees.)

B. Pollution

EXAMPLES: Air, water in local streams in lakes, waste disposal areas, nuclear waste sites

C. Natural disasters

(NOTE: Every community should be able to carry out a plan to evacuate the entire community, treat victims, and do whatever it takes to get the community back on its feet following a natural disaster. Frequent practice drills keep the community ready to cope with severe acts of nature. The Civil Defense helps agencies develop a plan for natural disasters; they also monitor weather and road conditions. The American Red Cross also helps victims of natural disasters.)

EXAMPLES: Tornadoes, floods, hurricanes, fire, earthquakes

INFORMATION SHEET

D. Chemical abuse

(NOTE: Community agencies can educate the public about the dangers of chemical abuse and ways to avoid being pressured into using drugs. In addition, community agencies can provide help for chemical abusers.)

E. Crime

(NOTE: Community agencies protect citizens from crime and promote community projects to cut down on crime.)

EXAMPLES: Child abuse, robbery, assault, rape, arson

F. Teenage pregnancy

COMMUNITY HEALTH
UNIT IV

ASSIGNMENT SHEET #1 — RESEARCH FUNCTIONS OF A HEALTH ORGANIZATION OR AGENCY

NAME ____________________________________ SCORE ______________

In this assignment you will gather information about two different organizations or agencies. You can get your information from pamphlets, films, or representatives of the organizations.

PART I

Select one of the following organizations or agencies:

- Alcoholics Anonymous
- American Cancer Society
- American Diabetes Association
- American Heart Association
- American Lung Association
- American Red Cross
- Association for the Aid of Crippled Children
- Birthright
- Colostomy Club
- Family Service Association
- Laryngectomy Club
- Muscular Dystrophy Association of America
- National Association for Mental Health
- National Council on Aging
- National Foundation of March of Dimes
- National Hemophilia Foundation
- National Rehabilitation Association
- Parents Without Partners
- Planned Parenthood
- Reach to Recovery
- Salvation Army
- State health department
- Trauma Society
- United Cerebral Palsy Association
- United Fund
- United Service Organizations
- Visiting Nurse Association
- World Health Organization

Research information about the functions, funding, administration, and services of the organization you chose; then answer the following questions.

A. What is the main function of the organization?

____

____

____

B. Is it an official organization or a volunteer agency? Explain.

____

____

C. How is the organization funded?

____

____

____

ASSIGNMENT SHEET #1

D. Are the administrators appointed, voted in, or hired from the public?

E. What services does the organization or agency provide?

F. What types of career opportunities are available in this agency or organization?

G. What additional information, if any, did you find?

PART II

The goal of the Health Department is to provide health care programs and services that will meet the needs of the community. Contact your local health department to find out what specific services are available to your community.

List at least three components of each of the following major categories of health programs and services.

EXAMPLE: Chronic disease screening clinic

Diabetes screening
Blood pressure checks
Anemia screening
Glaucoma screening
Cancer screening
Referral and follow-up

ASSIGNMENT SHEET #1

A. Communicable disease control

B. Family planning

C. Immunization clinic

D. Adolescent clinic

E. WIC clinic

ASSIGNMENT SHEET #1

F. Child health clinic

G. Environmental health services

H. Guidance services

I. Home health care

COMMUNITY HEALTH
UNIT IV

ASSIGNMENT SHEET #2 — PREPARE TO BE A RESOURCE PERSON

NAME ______________________ SCORE __________

As a health worker, you will probably be viewed as a resource person. People will look to you for information when they need help and health care.

Using the knowledge you have gained about various agencies and organizations, answer the questions below each of the following situations.

A. A new family moves into the neighborhood with several children ranging in age from about three months to four years. The mother asks you about immunizations for the children. Because of several recent moves, finances are tight and none of the children has been to a doctor.

1. What agency would you suggest? ______________________
2. What immunizations are available? ______________________

____

3. Will there be a fee? ______________________
4. If so, what will it be? ______________________

B. A friend of yours is really having a rough time at home. The father is an alcoholic and is not working. The mother works at two jobs, and there are younger children at home.

1. What agencies or organizations could be of help? ______________________

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2. What can be done to help this family? ______________________

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C. A young, unmarried friend confides to you that she may be pregnant. She is afraid to tell her parents and does not know what to do or whom to see.

1. What agency or organization can help her? ______________________
2. What can you tell her that might be of some help? ______________________

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ASSIGNMENT SHEET #2

D. Billie was caught at school with drugs in his possession. He admits to you that he has been abusing hard drugs and wants to stop. His health is poor, and he is making bad grades in school because he often skips classes. When he is there, he cannot concentrate.

1. What agency or organization can help Billie? ______________________________

2. What can you tell him that might help? ______________________________

E. A distant relative comes to your city with her fiancé and asks for your assistance. They want to get married and would like some counseling about birth control and genetics. Funds are low, and they want to find a place to get blood tests and exams at a low cost.

1. What agency can help the couple? ______________________________

2. Will there be a fee? ______________________________

3. If so, what will it be? ______________________________

F. A classmate in your high school class confides to you that he may have a venereal disease. He does not want to go to the doctor because he does not want his parents to know. He tells you his symptoms, and you can see that he is very upset.

1. What agency can help him? ______________________________

2. Is there a way he can be treated without his parents' consent? ______________________________

3. How can you help him? ______________________________

COMMUNITY HEALTH
UNIT IV

ASSIGNMENT SHEET #3 — RESEARCH A CURRENT NATIONAL HEALTH ISSUE

NAME ______________________ SCORE __________

In any newspaper in our country, you can see articles on major health issues. Cancer research indicates that many substances produce carcinogenic chemicals. New methods of birth control for both men and women are being developed. Organ transplants are now a reality instead of a dream. New foods from plants are being developed. These are only a few of the issues we see, hear about, and read about each day on the radio and television and in newspapers and magazines.

Choose an issue that interests you. Research the information, using at least three different sources. Prepare a presentation on the topic. Include how you feel about the issue or your solution to the problem.

COMMUNITY HEALTH
UNIT IV

ASSIGNMENT SHEET #4 — FORMULATE SOLUTIONS TO COMMON COMMUNITY HEALTH PROBLEMS

NAME ______________________ SCORE __________

Community health problems affect everyone. Their solutions should be a matter of concern for all citizens. In this assignment sheet you will determine which agencies can be of help for each of the problems. In Part II you are asked for possible solutions to these problems.

PART I

For each of the following community health problems, list one or more health agencies that can be of assistance.

A. Sanitation problems

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B. Pollution

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C. Natural disasters

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D. Chemical abuse

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ASSIGNMENT SHEET #4

E. Crime

F. Teenage pregnancy

PART II

Consider each of the following community problems, then come up with a possible solution to help ease the problem. Be creative; use your imagination.

A. Sanitation problems

B. Pollution

C. Natural disasters

ASSIGNMENT SHEET #4

D. Chemical abuse

E. Crime

F. Teenage pregnancy

SAFETY AND BASIC FIRST AID
UNIT V

UNIT OBJECTIVE

After completing this unit, the student should be able to practice general safety rules and perform basic first aid. The student will show this ability by determining priority of care in an emergency situation and by completing job sheet and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match to their correct definitions terms associated with safety.
2. State general safety rules.
3. Match classes of fires to their correct descriptions.
4. Select from a list correct definitions of terms associated with first aid.
5. Select from a list correct descriptions of types of injuries.
6. Arrange in order first-aid actions to follow in an emergency.
7. Label the main pressure points to control bleeding.
8. Classify burns by degree according to their symptoms.
9. State guidelines for administering first aid to a victim with an eye injury.
10. Name signs and symptoms of fractures.
11. State guidelines for administering first aid to a victim with a suspected fracture.
12. Describe the symptoms of shock.
13. State guidelines for administering first aid to a victim with shock.
14. State ways to prevent heat distress.
15. Distinguish among symptoms of heat stroke, heat exhaustion, and heat cramps.
16. State ways to prevent frostbite.
17. Describe symptoms of frostbite.
18. Identify safety violations.

OBJECTIVE SHEET

19. Determine priority of care in an emergency situation.

20. Demonstrate the ability to perform first aid treatment for simulated accident victims.

SAFETY AND BASIC FIRST AID
UNIT V

INFORMATION SHEET

I. Terms and definitions associated with safety

A. **Accident** — Any sudden, unintentional event that causes injury or property damage

B. **Carelessness** — Failure to think before one acts; failure to pay attention

C. **Combustible** — Capable of burning

D. **Explosive** — Tending to blow up or burst violently and loudly

E. **Extinguish** — To put out a fire; to cause to cease burning

F. **Flammable** — Capable of being easily ignited, burning with extreme rapidity

G. **Hazard** — Source of danger

H. **Safety** — Freedom from danger, risk, or injury

II. General safety rules

(NOTE: Safety is the responsibility of everyone, especially in a health care occupation. The safety of others may rest in your hands. Be aware of any safety hazards that might exist in your environment, and try to eliminate them.)

A. Be familiar with the location of fire-fighting and first aid equipment

B. Be familiar with institutional policies on disasters

EXAMPLES: Know correct procedures in the event of fire or tornado.

C. Do not smoke when oxygen is in use

(NOTE: The combination of oxygen and electrical sparks could cause an explosion or fire. Therefore, do not comb hair or use electrical appliances or wool blankets in an area where oxygen is in use. An oxygen-rich environment is favorable to fire and explosion.)

D. Use proper lifting techniques

E. Do not use faulty equipment

(NOTE: Report faulty equipment immediately.)

F. Wipe up any spills and clean up litter immediately

(NOTE: It is very easy to slip and injure oneself on a wet or littered floor.)

G. Move equipment that is left in the improper place

(NOTE: Accidents occur very easily when a lot of clutter is in an area.)

INFORMATION SHEET

H. Never use solutions from bottles that are not labeled

I. Do not perform any procedure on a client unless you have been instructed to do so

J. Wash your hands frequently

(NOTE: Washing hands reduces the spread of infection.)

K. Dry your hands before using electrical equipment

L. Avoid horseplay and practical jokes

(NOTE: Rough, boisterous play increases the possibility of an accident.)

III. Descriptons of classes of fire

(NOTE: Fire extinguishers are labeled according to the class or classes of fires on which they may be used. The class letters are prominently displayed in distinctive shapes and colors. Most new extinguishers also contain pictorial labels depicting the class or classes of fires on which the extinguisher may or may not be used.)

A. **Class A** — Fires that occur in ordinary combustible materials such as wood, rags, rubber, and plastics

B. **Class B** — Fires that occur with flammable liquids or gases such as those used in surgery and respiratory therapy

C. **Class C** — Fires that occur in or near electrical equipment such as electrical wires

D. **Class D** — Fires that occur with combustible metals

IV. Terms associated with first aid

A. **Antidote** — Substance that neutralizes poisons and their effects

B. **Asphyxiation** — Decrease in amount of oxygen and increase in amount of carbon dioxide in the body; suffocation

C. **Bandage** — Material used to hold dressing or splint in place; helps to immobilize, support, and protect an injured body part

D. **Dressing** — Protective cover placed over wound

E. **First aid** — Immediate, temporary care given to the victim of an accident or sudden illness until the services of a physician can be obtained

F. **Hemorrhage** — Abnormal internal or external discharge of blood

(NOTE: External symptom is obvious blood flow, and internal symptom is shock.)

G. **Poison** — Substance that can cause structural damage or functional disturbance

INFORMATION SHEET

H. **Resuscitation** — Act of reviving a person by bringing the person back to full consciousness

I. **Shock** — Condition resulting from ineffective circulation of blood and oxygen

J. **Splint** — Device to immobilize an injured part when fracture is suspected

K. **Tourniquet** — Any device, such as a bandage and stick, used to compress a blood vessel to stop bleeding and control blood flow

(NOTE: Tourniquets are used only on severe, life-threatening hemorrhage that cannot be controlled by any other means.)

V. Types of injuries

A. **Abrasion** — A scraping or rubbing away of a skin surface by friction

(NOTE: Treatment consists of cleaning wound and medicating area, which may then be covered by a dressing.)

B. **Closed fracture** — Broken bone beneath the skin with no open wound

C. **Contusion** — Injury in which skin is not broken

EXAMPLE: Bruise

D. **Dislocation** — Bone of a joint moved out of its proper place

(NOTE: When performing first aid, **never** attempt to reduce a dislocation.)

E. **Incision** — Cut or wound made by a sharp instrument

(NOTE: Clean the wound, and determine whether the severity of the wound requires suturing. If not, apply a sterile dressing.)

F. **Laceration** — Irregular tear of flesh

(NOTE: Treatment depends on the severity of the wound.)

G. **Open fracture** — Broken bone that often protrudes through an opening in the skin

H. **Puncture** — Wound made by piercing or penetrating with a pointed object or instrument

EXAMPLE: Needle wounds

(NOTE: Take care in the disposal of needles. A health care worker who accidently pricks himself or herself with a needle used on an infected person can contract a disease such as hepatitis. After using a needle, break it off at the hub to prevent its reuse. Drug abusers may try to obtain needles whether they have been used or not.)

INFORMATION SHEET

I. **Sprain** — Trauma to a joint, causing pain and disability

J. **Strain** — Muscle injury caused by overstretching

K. **Wound** — Any injury causing a break in the skin or damage to tissues

VI. First-aid actions to follow in an emergency

(NOTE: When you give first aid, you must first deal with the victim's physical condition, then the victim's emotional state, and finally the whole accident situation. Life-threatening situations such as respiratory arrest, heart attack, stroke, hemorrhage, poisoning, and shock require urgent care. The actions listed below are from the American Red Cross book *Standard First Aid and Personal Safety* and are given in the order you might follow in an emergency.)

A. Rescue victim and yourself from immediate danger

B. Restore or maintain breathing and heartbeat

C. Control heavy bleeding

D. Treat for poisoning

E. Prevent shock

F. Examine victim carefully to evaluate injury

G. Seek medical help

H. Keep checking and assisting victim until medical help is obtained

VII. Main pressure points (See Figure 1)

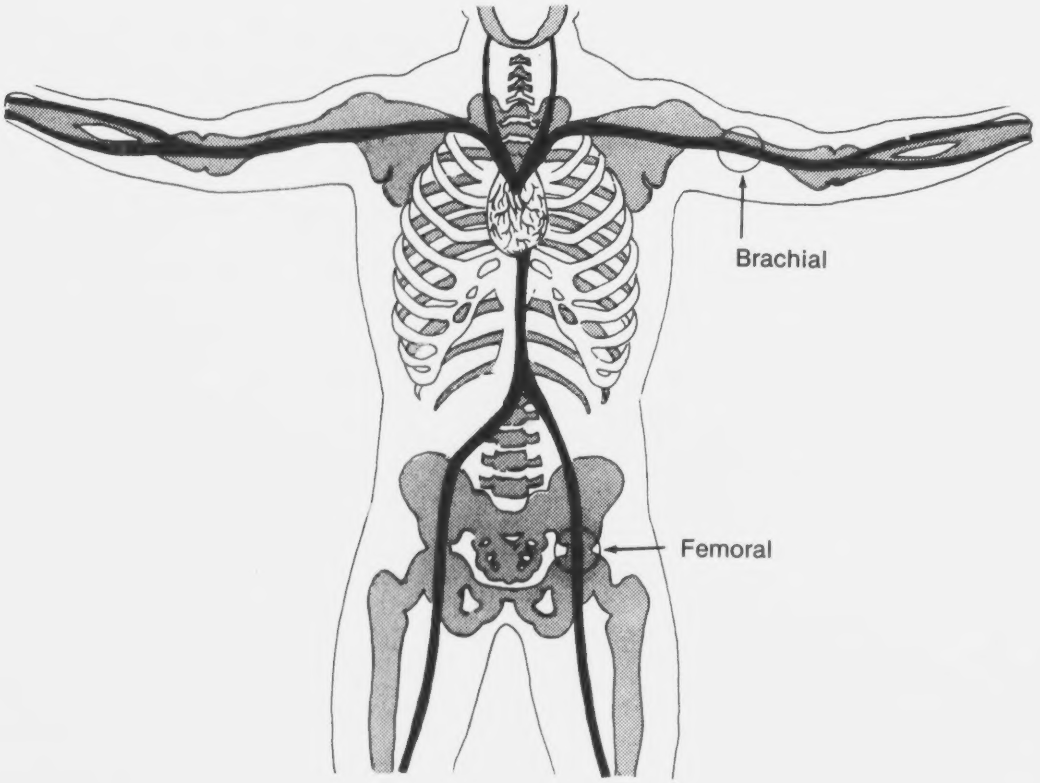
CAUTION

Do not use a pressure point for an arm or leg wound UNLESS direct pressure and elevation do not stop the bleeding. Always release the pressure point gradually when bleeding has been brought under control.

(NOTE: Using direct pressure to control bleeding is better than using a pressure point or a tourniquet because direct pressure stops circulation only at the wound.)

INFORMATION SHEET

FIGURE 1



VIII. Degrees of burns

A. First-degree burn

(NOTE: First-degree burns can be caused by sunburn, light contact with hot objects, or contact with hot water or scalding steam.)

1. Redness of discoloration
2. Mild swelling and pain
3. Rapid healing

B. Second-degree burn

(NOTE: A second-degree burn results from a deep sunburn or contact with hot liquids.)

INFORMATION SHEET

1. Pain greater than first degree
2. Damage extending into the first layer of tissue
3. Mottled or red areas
4. Blistering
5. Swelling
6. Wet appearance of burned area due to loss of plasma

C. Third-degree burn

(NOTE: Third-degree burns can be caused from exposure to fire or flames, prolonged contact with hot objects, contact with electricity, or immersion in hot or boiling liquids.)

1. Deep tissue destruction

   (NOTE: All layers of the skin are injured.)

2. Less pain

   (NOTE: There is less pain because of damage to nerve endings.)

3. Charred or white appearance of the burned area

IX. Guidelines for administering first aid to a victim with an eye injury

(NOTE: Extreme care should be taken in administering first aid for injuries of the eye. The eye is sensitive and can easily be damaged further if the correct first aid methods are not carried out.)

A. **Do not let the victim rub the eye**

B. **Do not** attempt to remove a foreign object that is embedded in the eye

(NOTE: Apply a dry sterile dressing and obtain medical help.)

C. **Do not** attempt to remove any object protruding from the eye

(NOTE: Cover eye with a sterile dressing, trying not to move the object.)

D. Flood eye with water **immediately** to remove any chemical substances

(NOTE: Flush the eye with great care to avoid further injury, infection, or contamination to the outer eye.)

INFORMATION SHEET

E. Apply a dressing to both eyes if there is a contusion or black eye, internal bleeding, or torn eye tissue

(NOTE: Cover both eyes to prevent involuntary movement of the injured eye.)

X. Signs and symptoms of fractures

(NOTE: An accurate diagnosis of a fracture can be made only by a physician with the assistance of an x-ray examination. If there is any doubt or any sign or suspicion of a fracture, perform first aid as if there were a fracture.)

A. Victim's account of injury

(NOTE: The victim may have heard a bond snap or crack, or complain of a grating sensation.)

B. Deformities

C. Limited abnormal movement of a limb

D. Loss of motion

E. Pain

F. Swelling

G. Discoloration

H. Bone fragments protruding through the skin

I. Hemorrhage

(NOTE: Large amounts of bleeding can occur internally or externally, especially if a hip is broken.)

XI. Guidelines for administering first aid to a victim with a suspected fracture

(NOTE: The objectives for administering first aid for fractures include [1] providing necessary first aid care, [2] preventing broken bone ends and adjacent joints from moving, and [3] giving care for traumatic shock.)

A. Prevent motion of injured parts and adjacent joints

B. **Do not** attempt to move an injured person who obviously requires hospitalization UNLESS there is a life-threatening emergency

EXAMPLES: Danger of fire, carbon-monoxide poisoning, explosion, oncoming traffic

INFORMATION SHEET

C. Lift and move an unconscious victim as though the injury is to the neck or spine; provide rigid support for victim's back and head

D. **Do not** allow victim to move the head (and do not move it yourself) when there is a possible neck or spinal fracture

E. Give priority to open fractures over closed fractures unless associated injuries dictate otherwise

F. **Never** test for fracture by having the victim move the possibly broken part or try to walk on a possibly broken leg

G. **Never** attempt to set or reduce a fracture or try to push a protruding bone end back in place

H. If possible, take time to tie victim's injured leg to uninjured one, or to bind injured arm to chest or side

I. After providing urgent care, treat victim to prevent shock

XII. **Symptoms of shock**

(NOTE: Shock is a set of signs and symptoms associated with lack of blood supply to body organs. Untreated shock can lead to death. Shock can be caused by hemorrhage, excessive pain, infection, heart attack, stroke, chemical poisoning, lack of oxygen, psychological trauma, or dehydration.)

A. Pale or bluish skin that is cool to the touch

B. Moist, clammy skin if perspiration has occurred

C. Rapid, weak pulse

(NOTE: A radial pulse may be too weak to be felt, and a carotid artery in the neck may have to be used to count the pulse.)

D. Rapid, shallow, possibly irregular respirations.

E. Low blood pressure

F. General weakness

(NOTE: As shock progresses, the victim will lose consciousness.)

G. Anxiety and restlessness

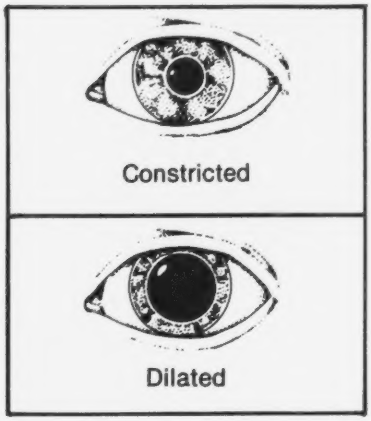
H. Excessive thirst

I. Blurred vision; as shock progresses, the eye may appear sunken

INFORMATION SHEET

J. Possibly dilated pupils (Figure 2)

FIGURE 2



XIII. Guidelines for administering first aid to a victim with shock

(NOTE: Treatment is aimed at [1] eliminating the cause of shock, [2] improving circulation, [3] providing adequate oxygen supply, and [4] maintaining body temperature.)

A. Eliminate cause of shock

B. Keep victim lying down

(NOTE: Move the victim of a suspected neck or spinal injury ONLY IF there is a life-threatening emergency.)

C. Maintain an adequate supply of oxygen

D. Cover victim with blankets or clothing to prevent chilling or exposure to cold; place a blanket under the victim if necessary

E. Avoid giving victim anything to eat or drink

(NOTE: Fluids may be necessary for a dehydrated victim, but give fluids cautiously. If the victim is unconscious or convulsing, has a brain injury, or may require surgery, **avoid all fluids and give nothing by mouth.**)

F. Obtain medical help as soon as possible

INFORMATION SHEET

XIV. Prevention of heat distress

A. Drink plenty of fluids

B. Do not overexert

C. Wear lightweight clothing that allows sweat to evaporate

D. Keep head covered and face shaded

E. Take short work breaks frequently

F. Rest in the shade or in an air-conditioned room whenever possible

XV. Symptoms of heat stroke, heat exhaustion, and heat cramps

A. Heat stroke — Flushed, hot, dry skin and high body temperature

(NOTE: Heat stroke is an immediate, life-threatening emergency urgently requiring medical attention. The main symptoms of heat stroke are listed above; but other symptoms may include dizziness, nausea, headache, rapid pulse, offensive body odor, and unconsciousness.)

B. Heat exhaustion — Pale, cool, clammy skin and normal body temperature

(NOTE: Heat exhaustion is a much less dangerous condition than heat stroke. Symptoms, in addition to the main ones listed above, may include heavy sweating, extreme tiredness or weakness, headache, vomiting, and fainting. Heat cramps in the abdomen or legs may accompany or precede heat exhaustion.)

C. Heat cramps — Muscle pains and spasms caused by loss of salt through perspiration or inadequate intake

XVI. Prevention of frostbite

(NOTE: Arrange work to minimize exposure to cold.)

A. Wear protective cold-weather clothing

B. Wear several layers of light clothing rather than one layer of heavy clothing

C. Take break periods in a warm place

D. Drink warm beverages

E. Try to keep from sweating

F. Do not get clothes wet

(NOTE: Change clothes as soon as possible if they do get wet.)

INFORMATION SHEET

XVII. Symptoms of frostbite

(NOTE: Frostbite is the freezing of tissue fluids, with damage to the skin and underlying tissues.)

A. Pale, grayish, glossy skin

B. Skin cold to touch, numbness, and sometimes pain that gradually subsides

C. In extreme cases confusion, lethargy, shock, followed by unconsciousness and death

SAFETY AND BASIC FIRST AID
UNIT V

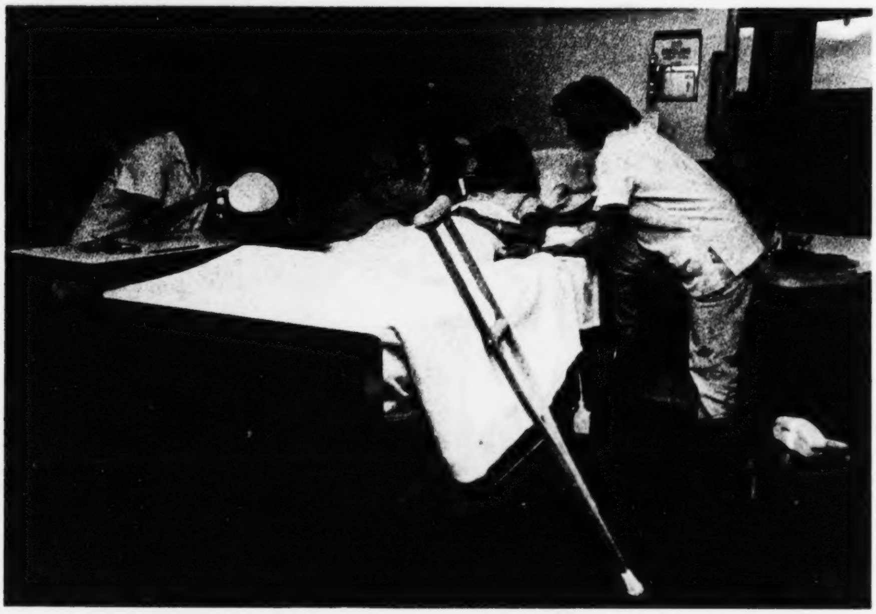
ASSIGNMENT SHEET #1 — IDENTIFY SAFETY VIOLATIONS

NAME ______________________________ SCORE ______________

A health care worker should be constantly aware of threats to his or her own safety and to the safety of clients and co-workers. The health profession requires the use of many potentially dangerous objects and substances and requires work in areas where an accident is possible with even momentary carelessness. In order to prevent serious injury or even death, safe workers must always be on the lookout for dangerous situations in their work and in the work of those around them.

Study the following photographs and note any hazardous situations that exist. Write your list of dangerous conditions or practices in the blanks below each photograph.

A.



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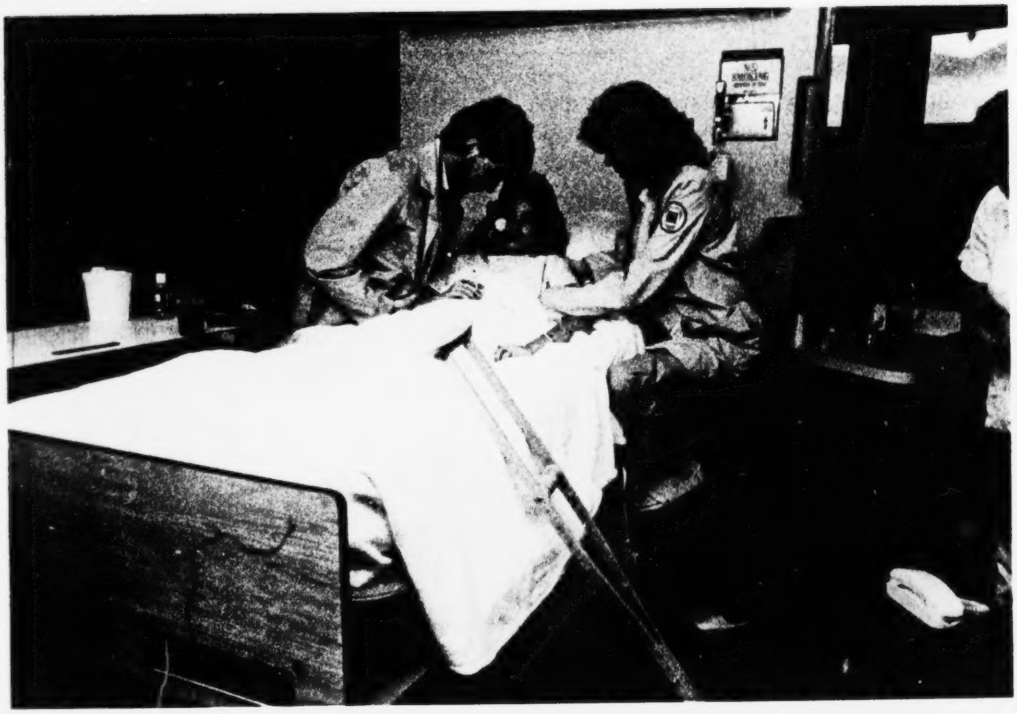
ASSIGNMENT SHEET #1

B.



SAFETY AND BASIC FIRST AID
UNIT V

ASSIGNMENT SHEET #2 — DETERMINE PRIORITY OF CARE IN AN EMERGENCY SITUATION

NAME ______________________________ SCORE ______________

One evening while driving on a two-lane highway on the edge of a small town, you are the first to arrive at the scene of a three-car accident. You see a man in the center of the highway waving to you for help, and you can see several others lying or sitting by the cars. You pull to the side of the road and get out of the car as the man who was waving comes toward you. "We've had a terrible wreck. My son is badly hurt, and I don't think that woman over there is still alive; please help us." You quickly observe two mangled cars and broken glass scattered over the pavement and roadside. The third car does not appear to be damaged as much; but you can see what appears to be gasoline leaking, and there are strong fumes in the air. As you observe the scene, you look at each person who has been injured to see what will need to be done.

Man A — The one who was waving you down appears to be in his late fifties. He is talking very rapidly, and his skin is very pale, cool, and clammy. A deep laceration approximately four inches long on the forehead above his left eye is oozing blood. His hands and arms are covered with small cuts and abrasions.

Man B — The son of Man A is approximately twenty years old and is lying by the first car, clutching his right leg with the knee drawn up. His pants leg is torn and soaked with blood, and the leg appears to be twisted. His shirt is also torn, and you can see multiple cuts and abrasions on chest area. He is moaning and crying with pain.

Man C — An older man, approximately in his seventies, is kneeling over Woman D, calling her name over and over. His right arm is cradling his left arm. You can see through the torn sleeve that the arm is injured, and there is a bone protruding above the elbow. He is crying silently, and you hear some wheezing when he exhales.

Woman D — An older woman in her sixties, wife of Man C, is lying on her side by the second car. Her color is very pale, and there are no respirations that you can see. The pulse is weak and thready, and she has a laceration on her right arm that is bleeding actively. You learn from Man C that his wife had a heart attack three months ago and has been on medication since then.

Woman E — Young woman in her thirties is pacing around the third car, crying, wringing her hands, and muttering to herself. She stops to wipe blood and tears from her face and hands. Other than superficial cuts and bruises, she does not appear to have any injuries.

Woman F — The mother of Woman E is in her late fifties and is sitting beside the third car, holding her right hand over her left rib cage. Her left ankle is beginning to swell and is quite bruised. She appears fairly calm and tells you that she is diabetic and did not have any lunch because they were in a hurry to get to the town for a visit. She is very concerned about her daughter because she is quite nervous and has had some emotional problems in the last year.

ASSIGNMENT SHEET #2

PART I

Using your first aid knowledge, describe your actions beginning with the priorities of care.

Would you give first aid to the least-injured person so that he or she could help you in treating others, or would you go directly to the most injured person and begin emergency first aid care? Place the number "1" next to the name of the person you would care for first, the number "2" next to the person you would care for second, and so on through number "6." After you decide the order of persons you would aid, describe each person's care.

Man A — ____

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Man B — ____

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____

Man C — ____

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Woman D — ____

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____

Woman E — ____

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ASSIGNMENT SHEET #2

Woman F — ____

_____ ____

____

____

PART II

After you describe your care, share your work with the class. Justify your reasons for choosing your priorities of care.

SAFETY AND BASIC FIRST AID
UNIT V

JOB SHEET #1 — PERFORM FIRST AID TREATMENT FOR SIMULATED ACCIDENT VICTIMS

I. Equipment and materials

A. Resuscitation doll

(NOTE: Never practice CPR on a breathing person.)

B. Clean dressings (prepared gauze, clean handerchiefs, clean articles of clothing)

C. Blankets

D. Water and basin

E. Rubbing alcohol

F. Salt

G. Cup or glass

H. Sterile dressings (gauze pads and cotton)

I. Splint material

J. Strips of material for securing splints

K. Towels

II. **Procedure for adult victim of suspected cardiopulmonary arrest**

A. Determine unresponsiveness

1. Tap or gently shake victim's shoulder

2. Shout, "Are you okay?"

(NOTE: This procedure is recommended in case the person may only be asleep.)

B. *If* victim remains unresponsive, call for help

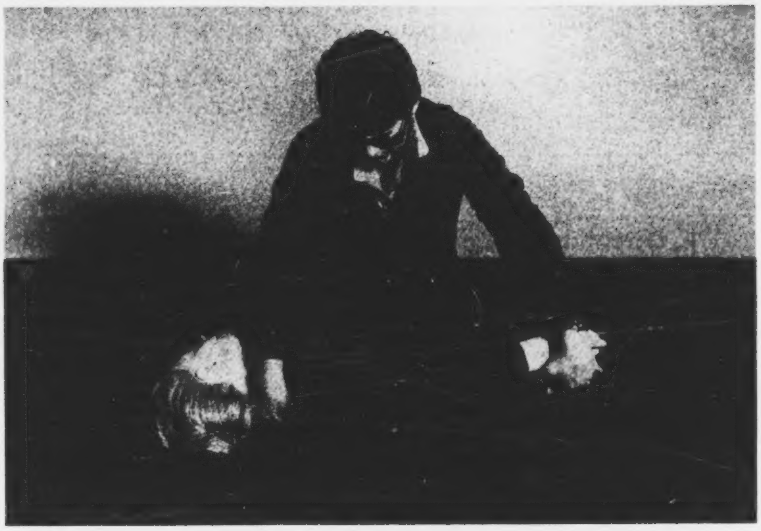
(NOTE: Call out to alert bystanders so that they will know help is needed.)

C. Position victim for cardiopulmonary resuscitation (CPR)

1. Place victim flat on back, turning victim as a unit while supporting his or her head and neck (See Figure 3)

JOB SHEET #1

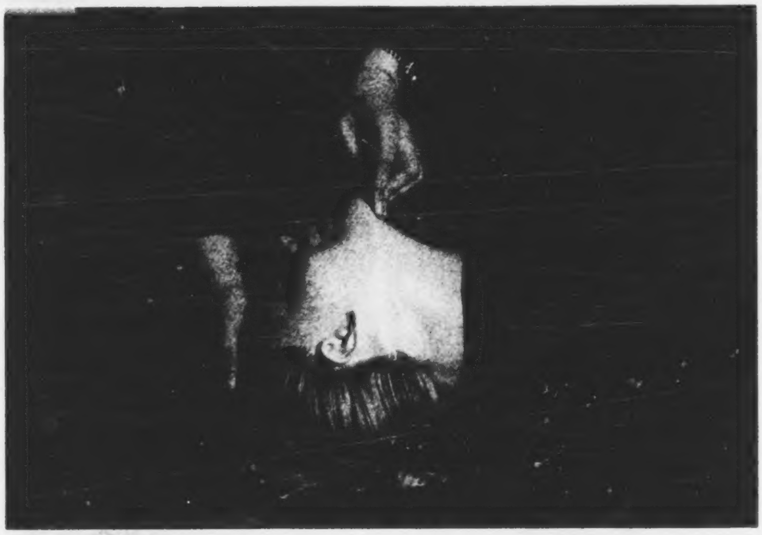
FIGURE 3



2. Open victim's airway, using head-tilt/chin-lift maneuver, tilting back victim's head while lifting victim's chin (Figure 4)

   (NOTE: The head-tilt/chin-lift maneuver positions victim's tongue to prevent obstruction of the airway.)

FIGURE 4



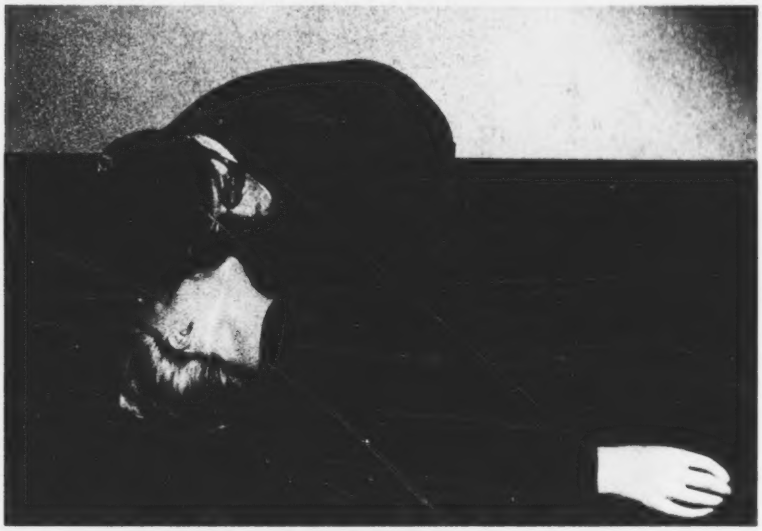
JOB SHEET #1

D. Determine breathlessness

1. Use head-lift/chin-lift maneuver to maintain open airway

2. Place your ear over victim's mouth and observe the chest for movement while listening and feeling for breathing; look, listen, and feel (Figure 5)

FIGURE 5



E. *If* victim is not breathing, ventilate victim

CAUTION

Do not ventilate a breathing person.

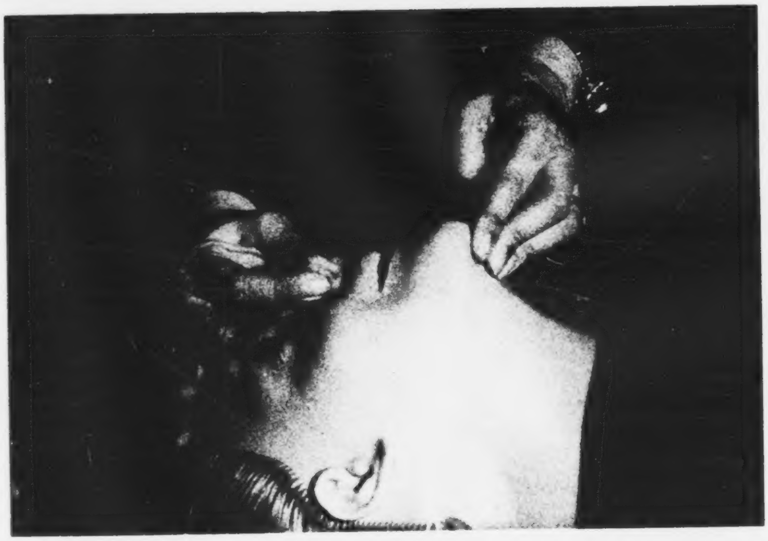
1. Use head-tilt/chin-lift maneuver to maintain open airway

2. Pinch victim's nostrils shut (See Figure 6)

   (NOTE: Pinching the victim's nostrils prevents air from escaping through the nose during ventilation.)

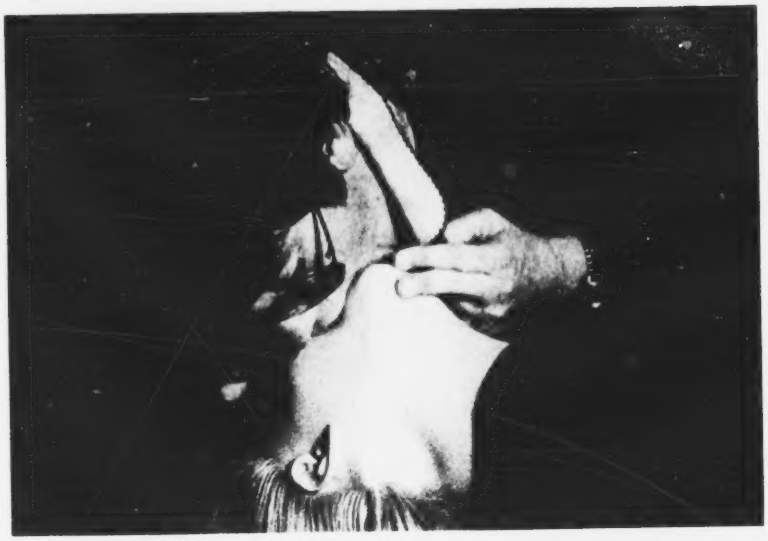
JOB SHEET #1

FIGURE 6



3. Cover the victim's mouth with your mouth, making as airtight a seal as possible (Figure 7)

FIGURE 7



JOB SHEET #1

4. Ventilate by breathing into victim's mouth two times at a rate of 1 to 1 ½ seconds per inspiration, while watching for chest rise

CAUTION

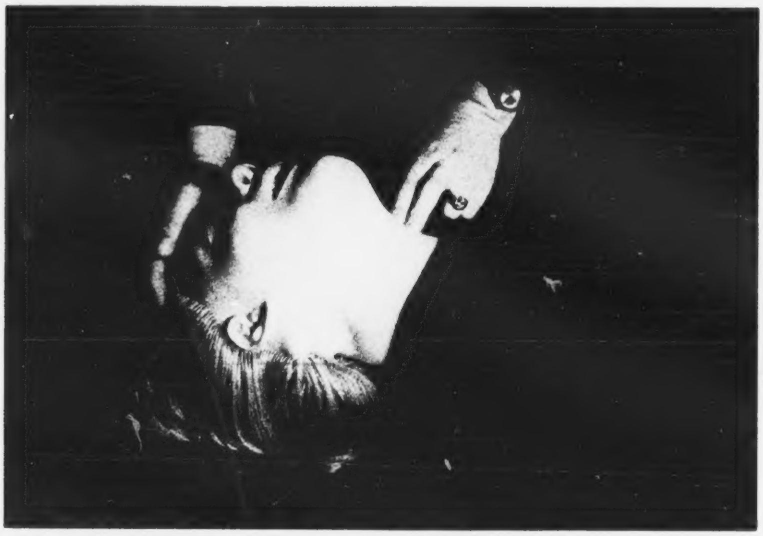
Remove your mouth from victim's mouth, and allow victim's chest to deflate between ventilations.

F. Determine pulselessness

1. Maintain head tilt with one hand on victim's forehead (See Figure 8)

2. Using hand that was on victim's chin, feel for carotid pulse on near side of victim (Figure 8)

FIGURE 8



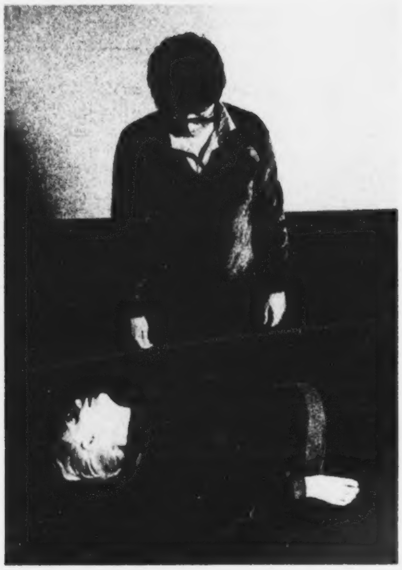
G. If someone responded to call for help, send him or her to call for an ambulance; give local emergency number if known

H. *If* victim has no pulse, begin chest compressions

1. Kneel beside victim's shoulders (See Figure 9)

JOB SHEET #1

FIGURE 9



2. Establish landmark (hand position)

   a. Beginning at victim's side, locate bottom of rib cage (See Figure 10)

   b. Run your fingers along bottom of rib cage and then up at center of rib cage to locate bottom of sternum (See Figure 10)

   c. Measure 2 to 3 finger widths up from bottom of sternum to establish landmark (Figure 11)

FIGURE 10

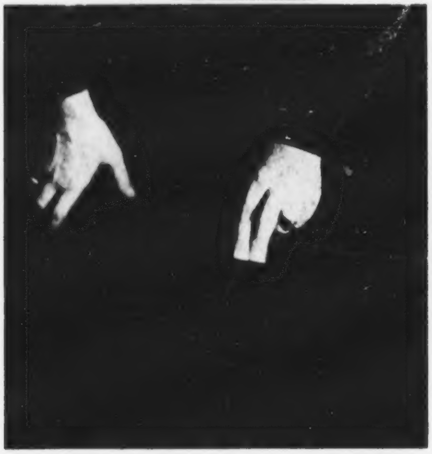
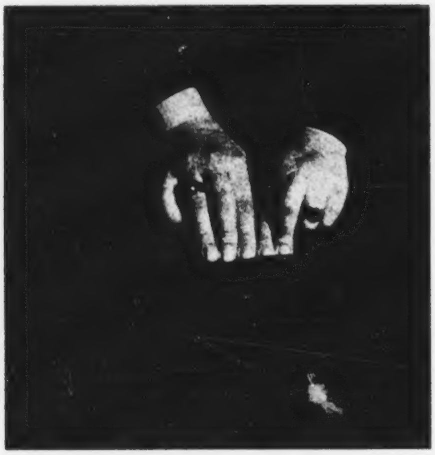


FIGURE 11



JOB SHEET #1

3. Position *heel* of one hand on landmark, place other hand on top, interlace fingers (Figure 12)

> **CAUTION**
>
> Improper hand position can cause broken ribs, punctured lungs, and lacerated liver or spleen. Apply pressure with heel of hand only.

FIGURE 12

4. Deliver 15 compressions within 9 to 11 seconds, using the following guidelines
   - a. Keep your shoulders over victim's sternum
   - b. Keep arms straight
   - c. Maintain an equal compression/relaxation ratio
   - d. Compress adult victim's chest to a depth of 1 $1/2$ to 2 inches
   - e. Keep hands on victim's sternum during upstroke
   - f. Relax pressure on victim's chest completely on upstroke
   - g. Repeat a phrase such as "One and two and three and. . . " to maintain a rate of from 80 to 100 compressions per minute

JOB SHEET #1

I. Ventilate victim

  1. Use head-tilt/chin-lift manuever to open airway

  2. Seal mouth and nose

  3. Deliver 2 ventilations at a rate of 1 to 1 ½ seconds per inspiration; watch for chest movement

> **CAUTION**
>
> Remove your mouth from victim's mouth, and allow victim's chest to deflate between ventilations.

J. Deliver 3 more sets of 15 compressions to 2 ventilations

K. Reassess pulse by checking carotid artery

L. *If* pulse is absent, continue CPR

  1. Ventilate twice, watching for chest to rise

  2. Resume cycles of 15 compressions to 2 ventilations (Steps H and I)

  3. Check carotid pulse every few minutes

M. *If* pulse is present, open airway and evaluate breathing

  1. Use head-tilt/chin-lift manuever to open airway

  2. Look, listen, and feel for breathing

N. *If* breathing is absent, perform ventilations at 12 times per minute, while monitoring pulse

O. *If* breathing is present, maintain open airway and monitor pulse and breathing until medical help arrives

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III. **Procedure for bleeding victim**

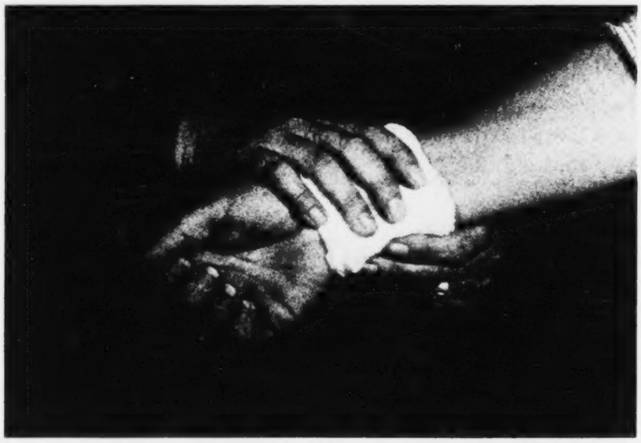
> **CAUTION**
>
> Never remove a penetrating object from a wound as this could be fatal for the victim. Apply bulky dressing around the object as best you can to stabilize the object. Direct pressure and elevation will stop bleeding from most wounds.

JOB SHEET #1

A. Apply a thick dressing (prepared gauze, clean handkerchiefs, clean articles of clothing) directly over wound, and press firmly with hand (Figure 13)

(NOTE: If no dressings are available, use your bare hand until a suitable dressing can be found.)

FIGURE 13



B. Elevate wound when you apply direct pressure if it does not cause victim pain and you do not suspect broken bones

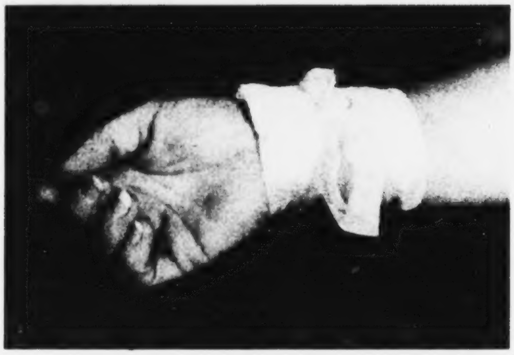
C. Observe dressing frequently to see whether bleeding has stopped or slowed

CAUTION

Do not disturb blood clots after they have formed. If blood soaks through dressing, do not remove dressing, but add more layers.

D. *If* bleeding is still active, apply a pressure bandage by holding the dressing in place with one hand, wrapping bandage directly over and around wound, and tying knot over wound; do not reduce pressure (Figure 14)

FIGURE 14



JOB SHEET #1

E. *If* bleeding continues, keep using direct pressure (and elevation when suitable), but also use a pressure point

(NOTE: Do not use a pressure point for an arm or leg wound unless direct pressure and elevation do not stop the bleeding.)

F. When bleeding is under control, gradually release the pressure point

G. If pressure point is not successful, apply a tourniquet **only as a last resort**

CAUTION

After applying a tourniquet, **do not loosen it**. Attach a note to the victim in a conspicuous place with time tourniquet was applied and its location. Get medical help **immediately**.

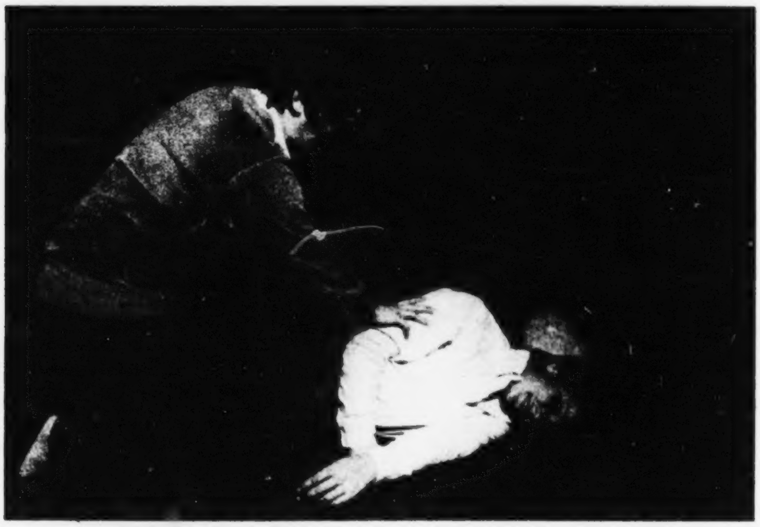
H. Treat victim to prevent shock

(NOTE: A victim may suffer shock and loss of consciousness from loss of blood. Because it is possible to bleed to death in a very short period of time, bleeding should be given urgent care, and then the victim should be treated for shock.)

1. Keep victim lying down

2. If victim is bleeding from the mouth, place victim on one side so the blood will drain from mouth (Figure 15)

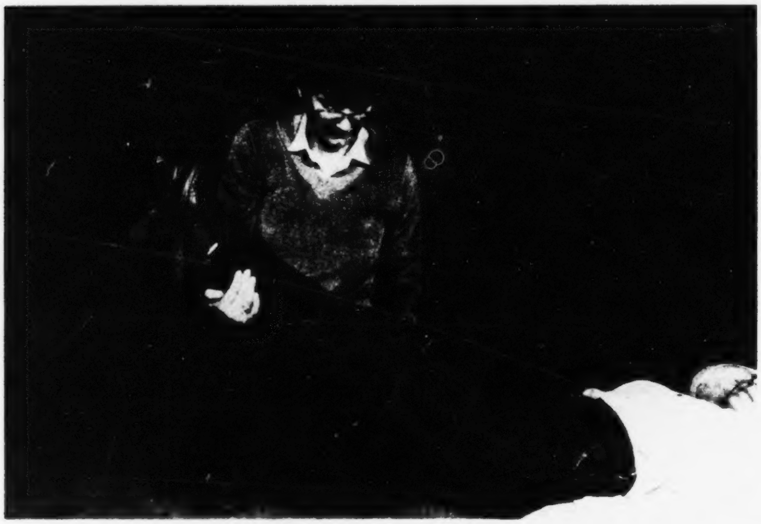
FIGURE 15



JOB SHEET #1

3. If victim feels faint, raise feet and leg—but only if moving the legs does not cause injury or pain (Figure 16)

FIGURE 16

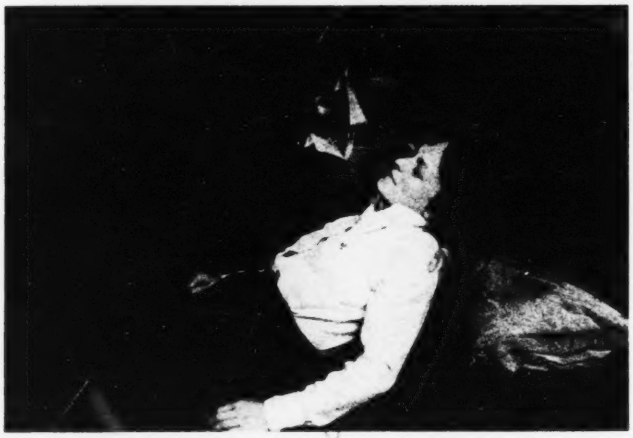


4. If victim is having difficulty breathing, raise the head and shoulders to maintain adequate supply of oxygen (Figure 17)

CAUTION

Raising only the head may bend the neck and block the airway. Do not raise head and shoulders if you suspect a neck or back injury.

FIGURE 17



JOB SHEET #1

5. Cover victim to prevent loss of body heat and to stabilize blood circulation

6. Give no fluids

I. Get medical help as soon as possible

IV. **Procedure for victim of heat distress**

A. Heat stroke

(NOTE: Heat stroke is always a life-threatening situation. In heat stroke, the victim's temperature-control system, which causes sweating, stops working correctly. The body temperature rises so high that brain damage and death will result if the victim is not cooled quickly.)

1. Move victim out of sun, preferably to an air-conditioned room

2. Cool the body immediately by soaking victim in cool but not cold water, sponging the body with rubbing alcohol or cool water, or pouring water on the body

3. When victim's body temperature has been reduced to a safe level (about 102°F), stop cooling process and observe the victim for about 10 minutes

4. If temperature starts to rise again, cool the victim again

(NOTE: Use a fan or air conditioner, or fan by hand to circulate air and promote cooling. Do not give coffee, tea, or alcoholic beverages.)

5. Transport victim to hospital immediately

B. Heat exhaustion

1. Move victim out of sun, preferably to an air-conditioned room

2. Loosen victim's clothing; apply cool, wet cloths; and fan to promote cooling

3. Give *sips* of salt water (2 pinches of salt per glass of water) every 15 minutes for an hour

CAUTION

If victim is vomiting, give no fluids.

4. Have victim remain lying down, and raise victim's feet 10 to 12 inches

5. Transport victim to hospital

(NOTE: Medical care is needed for heat exhaustion.)

JOB SHEET #1

C. Heat cramps

1. Move victim out of sun, preferably to an air-conditioned room
2. Apply firm pressure and warm, wet towels to cramped area
3. Give *sips* of salt water as for heat exhaustion
4. Have victim remain lying down, and raise victim's feet 10 to 12 inches

CAUTION

If left untreated, the victim may develop heat stroke.

V. **Procedure for burn victim**

A. First-degree burns

1. Apply cold water or submerge burned area in cold water
2. Apply a dry, sterile dressing to protect injury if necessary

B. Second-degree burns

1. Submerge area in cold water until pain eases; or apply cold, wet cloths

   (NOTE: Do not use ice water.)

2. Blot dry gently with sterile dressing or clean, lint-free cloths
3. Apply dry, sterile dressing, using care not to break blisters

CAUTION

Do not apply cream, ointments, sprays, or other substances to burn.

4. Get medical help as soon as possible

C. Third-degree burns

1. If burning process has not stopped

   a. Remove any smoldering clothing

   b. Immerse burned area in clean, cold water

JOB SHEET #1

CAUTION

Do not apply water to burn or immerse burn in water UNLESS burning process has not been stopped.

Immerse burned area for no more than 10 minutes. Prolonged immersion may cause life-threatening loss of body heat.

2. When burning process has stopped, cover burn with dry, thick, sterile dressing

3. Immobilize burned area as much as possible

CAUTION

Avoid removing tissue, clothing, or other materials contacting burned area.

4. Monitor victim's breathing and circulation

5. Treat to prevent shock

6. Transport victim to hospital as quickly as possible.

VI. **Procedure for victim with foreign object or substance in eye**

(NOTE: In an urgent-care situation involving a victim with an object or substance in the eye, flush the eye immediately with water from a water fountain or from a gently running hose or faucet. Never use a hose that is fitted with a power nozzle.)

A. Wash hands

B. Explain procedure to victim

C. Position victim on affected side

(NOTE: This is done so that the contaminated fluid does not run from the affected eye to the good eye.)

D. Moisten a sterile gauze pad with water and clean any debris from eyelid *only if* there is no foreign object in eye

CAUTION

Always wipe from inner to outer side to prevent contamination. If you suspect a foreign object in the eye, do not press on the eyelid, as that may cause the object to embed.

E. Use thumb and index finger to open eyelid

JOB SHEET #1

F. Flush eye by gently directing a stream of room-temperature water into inner side of eye

CAUTION
Do not touch the edge of the water container to the eye.

G. Flush eye for at least 15 minutes, especially if condition is caused by caustic substance

H. Save flushed-out foreign object if this is what has caused the condition

I. Place sterile gauze pad gently over both eyes

J. Transport victim to hospital immediately

VII. **Procedure for victim with suspected fracture**

A. Closed fracture

1. Ask victim what happened and what hurts

2. Examine victim carefully

CAUTION
Do not move or have the victim move body parts that may be injured.

(NOTE: After your initial examination, you will know whether an ambulance is needed. If such is the case, ask someone to call for an ambulance while you attend to the victim.)

3. *If* you cannot get immediate medical help, immobilize the joints above and below suspected fracture with splints, taking care to move the bones as little as possible

(NOTE: There are many types of splints available commercially; however, very satisfactory emergency splints can be made from corrugated cardboard, straight sticks, boards, rolled blankets, or newspapers.)

a. Choose or create a splint long enough to extend past the joints on either side of suspected fracture

b. Slide splints into place, taking care to move the bones as little as possible

c. Place padding (folded cloths, dressings, handkerchiefs, etc.) between splint and skin, especially over bony places

JOB SHEET #1

d. Hold splints in place with strips of cloth torn from clothing or with bandages, neckties, large handkerchiefs, or other suitable material

> **CAUTION**
> Do not cut off circulation by tying the cloth strips too tightly.

e. In fractures of the arm or leg, inspect fingers and toes often for swelling or bluish discoloration—signs that the bandages are too tight

f. Loosen bandages and reapply them if these signs appear

4. Elevate limb slightly to reduce hemorrhage and swelling

5. Treat to prevent shock

6. Transport victim to hospital if an ambulance is not needed

B. Open fracture

(NOTE: Open fractures are much more serious than closed fractures because of tissue damage and bleeding, the danger of infection, and the fact that the fracture area is always contaminated.)

1. Remove or cut away victim's clothing in area of suspected fracture

2. Examine victim carefully

> **CAUTION**
> Do not move or have the victim move body parts that may be injured.

(NOTE: After your initial examination, you will know whether an ambulance is needed. If such is the case, ask someone to call for an ambulance while you attend to the victim.)

3. *If* bone fragment *is not* protruding, control hemorrhage by applying pressure through a thick, sterile dressing over wound

> **CAUTION**
> Do not wash the wound, probe the wound, or insert your fingers in it.

4. *If* bone fragment *is* protruding, cover entire wound with large, thick, sterile bandage compress or pads; if these are not available, use freshly laundered sheets or towels

> **CAUTION**
> Never attempt to set or reduce a fracture or try to push a protruding bone end back in place.

JOB SHEET #1

5. *If* you cannot get immediate medical help, apply splints as described for closed fractures

6. Elevate limb slightly to reduce hemorrhage and swelling

7. Treat to prevent shock

8. Transport victim to hospital if an ambulance is not needed

VIII. **Procedure for victim of poisoning**

A. Inhaled toxic gases, vapors, or mists

1. Remove victim to source of fresh air

2. If victim is in an enclosed area, call fire department or rescue squad

3. While you attend to victim, direct someone to call an emergency squad

   (NOTE: The person who calls the emergency squad must indicate the nature of the problem and explain that oxygen should be brought to the scene.)

4. Loosen victim's tight clothing

5. If victim is unconscious, keep an open airway and give artificial respiration or CPR if indicated

6. Save label from or container of suspected poison for identification

7. Continue checking and assisting victim until medical help arrives

B. Absorption or skin contact with harsh or corrosive substance

1. Remove victim's contaminated clothing

2. Immediately drench and flush affected skin with large quantities of water

3. *If* poisoning is from corrosive substance, send for an ambulance immediately

4. Continue washing all contaminated skin with soap and water for at least five minutes

5. Keep victim's airway open and give artificial respiration if indicated

6. Continue checking and assisting victim until medical help arrives

JOB SHEET #1

C. Ingested poison

1. Dilute poison by having victim drink a glass of water or milk *if* victim is conscious and not having convulsions and *if* ingested substance is not corrosive

   (NOTE: Discontinue dilution if it makes victim nauseated. If victim does vomit, save a sample of the vomit for identification of the poison.)

2. Seek medical assistance by calling poison control center or a physician

   (NOTE: You should post the poison control number for your region on your telephone. If you do not have the number, dial 0 or 911.)

3. If victim is unconscious, keep victim's airway open and give artificial respiration or CPR if indicated

4. Save label from container of suspected poison for identification

5. Continue checking and assisting victim until medical help arrives

IX. **Procedure for victim of frostbite**

A. Remove victim from further exposure to cold

B. Protect the affected part from further injury

CAUTION

Do not rub area; rubbing will cause further damage. Always handle affected area gently.

C. Remove wet or restrictive clothing

D. Cover affected area with dry, sterile dressing

E. Keep victim warm

F. Monitor victim's breathing and circulation

G. Obtain medical help as quickly as possible

BASIC MATHEMATICS
UNIT I

UNIT OBJECTIVE

After completing this unit, the student should be able to solve basic math problems. This knowledge will be evidenced through completion of unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match terms associated with basic math to their correct definitions.
2. Match to their correct names symbols used in math problems.
3. Label the place values of a whole number.
4. Add whole numbers.
5. Subtract whole numbers.
6. Multiply whole numbers.
7. Divide whole numbers.
8. Distinguish among types of fractions.
9. Reduce fractions to lowest terms.
10. Convert mixed numbers to improper fractions.
11. Convert improper fractions to mixed numbers.
12. Add fractions.
13. Subtract fractions.
14. Multiply fractions.
15. Divide fractions.
16. Label the place values of a decimal number.
17. Add decimal numbers.
18. Subtract decimal numbers.

OBJECTIVE SHEET

19. Multiply decimal numbers.
20. Divide decimal numbers.
21. Convert fractions to decimal numbers and percentages.
22. Convert percentages to fractions and decimal numbers.
23. Solve percentage problems.
24. Solve basic ratio and proportion problems.
25. Identify graduations on a rule.
26. Read a rule to the nearest fraction of an inch.
27. Convert Roman numerals to Arabic numerals and Arabic numerals to Roman numerals.

BASIC MATHEMATICS
UNIT I

INFORMATION SHEET

I. Terms and definitions

A. **Addition** — Process of totaling two or more numbers to find another number called a sum

EXAMPLE: $3 + 5 + 9 = 17$

B. **Decimal** — Fraction with an unwritten denominator of 10 or some power of 10; indicated with a point before the numerator

EXAMPLES: $0.1 = {}^1/_{10}$
$0.06 = {}^6/_{100}$
$0.003 = {}^3/_{1000}$

C. **Denominator** — Bottom number of a fraction; indicates how many equal parts a unit contains; denotes *division*

D. **Digit** — Any one of the ten symbols, 0 to 9, by which all numbers can be expressed; numeral

E. **Division** — Opposite (inverse) operation of multiplication

EXAMPLE: $16 \div 2 = 8$ as opposed to $8 \times 2 = 16$

F. **Fraction** — Part of a whole; represents one or more equal parts of a unit (Figures 1 and 2)

EXAMPLES: ${}^1/_2$, ${}^3/_8$, ${}^1/_4$, ${}^3/_{16}$

FIGURE 1

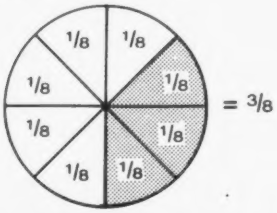
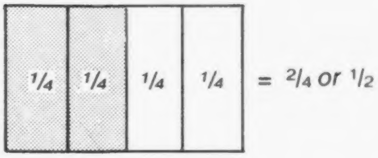


FIGURE 2



G. **Multiplication** — Abbreviated process of adding a number to itself a specified number of times

EXAMPLE: $6 \times 3 = 18$, which is the same as $6 + 6 + 6 = 18$

H. **Numerator** — Top number of a fraction; indicates how many parts of the denominator are taken

I. **Percent** — One part in a hundred; reckoned on the basis of a whole divided into one hundred parts

J. **Proportional** — Being relatively equal in size or quantity; having the same ratio

EXAMPLE: 1:1:3 is proportional to 0.5:0.5:1.5

K. **Ratio** — Relationship in quantity, amount, or size between two or more things; proportion

EXAMPLE: 4:1 (Ratio of four to one)

L. **Subtraction** — Opposite (inverse) operation of addition

EXAMPLE: $8 - 4 = 4$ as opposed to $4 + 4 = 8$

M. **Whole number (integer)** — Any natural number, either positive or negative, that represents a complete item

EXAMPLE: 25 is a whole number as opposed to $^{3}/_{4}$, a fraction or part of a whole.

II. Symbols used with math problems (Table 1)

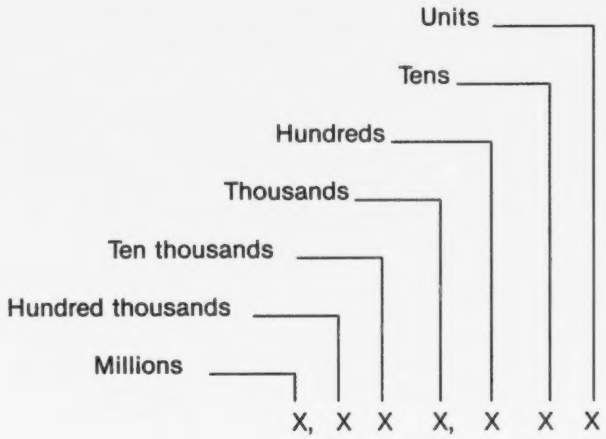
TABLE 1

Name of Symbol	Symbol
Plus sign (addition)	+
Minus sign (subtraction)	−
Times sign (multiplication)	×
Division sign	÷
Division frame	⟌
Equal sign	=
Decimal point	.
Percent symbol	%
Ratio symbol	:

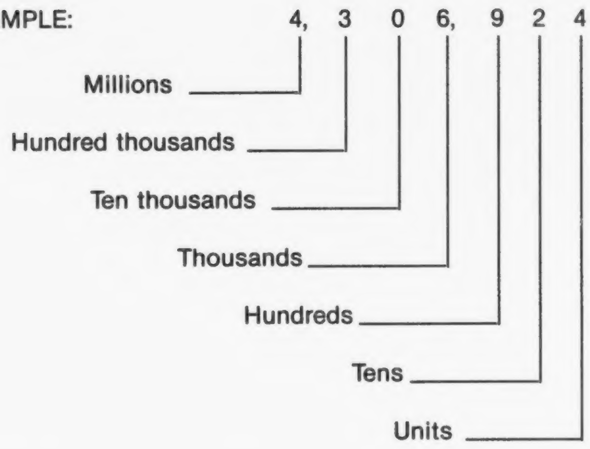
INFORMATION SHEET

III. Place values of a number

(NOTE: The position of a digit in a number shows how much that digit is worth. These positions are called *place values*.)


Units
Tens
Hundreds
Thousands
Ten thousands
Hundred thousands
Millions
X, X X X, X X X

EXAMPLE:


4, 3 0 6, 9 2 4
Millions
Hundred thousands
Ten thousands
Thousands
Hundreds
Tens
Units

(NOTE: The number in this example is four million, three hundred six thousand, nine hundred twenty-four.)

INFORMATION SHEET

IV. Adding whole numbers

A. Set up problem by writing units under units, tens under tens, and so on

EXAMPLE: Add the whole numbers 1632, 17, 550.

$$\begin{array}{r} 1632 \\ 17 \\ \underline{+\ 550} \end{array}$$

B. Add each column separately, beginning at top of units column

EXAMPLE:

$$\begin{array}{r} 1632 \\ 17 \\ \underline{+\ 550} \\ 9 \end{array} \qquad \begin{array}{r} 1632 \\ 17 \\ \underline{+\ 550} \\ 99 \end{array}$$

C. If the sum of any column is two or more digits, write the units digit in your answer and carrying the remaining digit(s) to the top of next column to the left

EXAMPLE:

$$\text{Write units digit.} \rightarrow \begin{array}{r} 1632 \\ 17 \\ \underline{+\ 550} \\ 199 \end{array} \qquad \begin{array}{r} 1 \\ 1632 \\ 17 \\ \underline{+\ 550} \\ 199 \end{array} \leftarrow \text{Carry remaining digit.}$$

D. Add any carried digit(s) above the column with that column

EXAMPLE:

$$\begin{array}{r} 1 \\ 1632 \\ 17 \\ \underline{+\ 550} \\ 2199 \end{array} \quad \text{Carried Digit}$$

V. Subtracting whole numbers

A. Set up problem by writing units under units, tens under tens, and so on

(NOTE: The top number in the problem [original number] is almost always larger than the bottom number [subtracted number].)

EXAMPLE: Subtract 91 from 123.

$$\begin{array}{rl} 123 & \text{Original Number} \\ \underline{-\ 91} & \text{Subtracted Number} \end{array}$$

B. Subtract each column separately, beginning at bottom of units column

EXAMPLE:

$$\begin{array}{r} 123 \\ \underline{-\ 91} \uparrow \\ 2 \end{array}$$

INFORMATION SHEET

C. If a digit in the subtracted number is larger than the digit above it, "borrow" 1 from the top digit in the next column to the left, decreasing that digit by one and increasing the digit being subtracted from by ten

EXAMPLE:

$$\begin{array}{r} \overset{0}{\cancel{1}}23 \\ -\ 91 \\ \hline 32 \end{array}$$

D. If there is nothing to borrow in the next left column (column contains a zero), first borrow for that column from its next left column

EXAMPLE:

$$\begin{array}{r} \overset{8}{\cancel{9}}\overset{10}{\cancel{0}}6 \\ -\ 318 \\ \hline \end{array} \qquad \begin{array}{r} \overset{8}{\cancel{9}}\overset{\overset{9}{\cancel{10}}}{\cancel{0}}6 \\ -\ 318 \\ \hline 8 \end{array} \qquad \begin{array}{r} \overset{8}{\cancel{9}}\overset{\overset{9}{\cancel{10}}}{\cancel{0}}6 \\ -\ 318 \\ \hline 88 \end{array} \qquad \begin{array}{r} \overset{8}{\cancel{9}}\overset{\overset{9}{\cancel{10}}}{\cancel{0}}6 \\ -\ 318 \\ \hline 588 \end{array}$$

E. Check your subtraction by adding your answer to the subtracted number

EXAMPLE: Problem Check

$$\begin{array}{rl} 271 & \text{Original Number} \\ -164 & \text{Subtracted Number} \\ \hline 107 & \text{Answer} \end{array} \qquad \begin{array}{rl} 271 & \text{Original Number} \\ -164 & \\ \hline +\ 107 & \\ \hline 271 & \text{Check Answer} \end{array}$$

(NOTE: If you have solved the problem correctly, your check answer should be the same as the original number.)

VI. Multiplying whole numbers

A. Set up problem by writing the larger number (original number) above the smaller number (multiplier), writing units under units, tens under tens, and so on

(NOTE: You will get the correct answer [product] no matter which number is placed above the other, but the faster method places the larger above the smaller.)

EXAMPLE: Multiply the numbers 53 and 4.

$$\begin{array}{rl} 53 & \text{Original Number} \\ \times\ 4 & \text{Multiplier} \\ \hline \end{array}$$

INFORMATION SHEET

B. If the multiplier contains only one digit, multiply each digit in the original number by it, working from right to left

1. Multiply units digit in original number by multiplier
2. Write answer units digit and insert necessary carry digit above next left column in original number as required

EXAMPLE:

$$\begin{array}{ccc} & 1 & \\ & 5 & 3 \\ & & \uparrow \\ \times & & 4 \\ \hline & & 2 \end{array}$$

3. Multiply tens digit by multiplier and add carried digit as required

EXAMPLE:

$$\begin{array}{cccc} & & 1 & \\ & & 5 & 3 \\ & & & \nwarrow \\ + & & & 4 \\ \hline & 2 & 1 & 2 \end{array}$$

C. If the multiplier contains more than one digit, find partial products

1. Multiply each digit in original number by each digit in multiplier, moving from right to left
2. Align partial products so that right-hand digit of each is directly under its corresponding digit in the multiplier

EXAMPLE: Multiply the numbers 174 and 42.

$$\begin{array}{ccccc} & & & & \\ & & 1 & 7 & 4 \\ & & & & \uparrow \\ \times & & & 4 & 2 \\ \hline & & & & 8 \end{array}
\qquad
\begin{array}{ccccc} & & 1 & & \\ & & 1 & 7 & 4 \\ & & & & \nwarrow \\ \times & & & 4 & 2 \\ \hline & & & 4 & 8 \end{array}
\qquad
\begin{array}{ccccc} & & 1 & & \\ & & 1 & 7 & 4 \\ & & & & \nwarrow \\ \times & & & 4 & 2 \\ \hline & & 3 & 4 & 8 \\ & & & & \\ & & \uparrow & & \\ \multicolumn{5}{c}{\text{First Partial}} \\ \multicolumn{5}{c}{\text{Product}} \end{array}
\qquad
\begin{array}{ccccc} & & & 1 & \\ & & 1 & 7 & 4 \\ & & & \nearrow & \\ \times & & & 4 & 2 \\ \hline & & 3 & 4 & 8 \\ & & & 6 & \end{array}
\qquad
\begin{array}{ccccc} & & 2 & 1 & \\ & & 1 & 7 & 4 \\ & & & \uparrow & \\ \times & & & 4 & 2 \\ \hline & & 3 & 4 & 8 \\ & & 9 & 6 & \end{array}
\qquad
\begin{array}{ccccc} & & 2 & & \\ & & 1 & 7 & 4 \\ & & & \nwarrow & \\ \times & & & 4 & 2 \\ \hline & & 3 & 4 & 8 \\ & 6 & 9 & 6 & \\ & & \uparrow & & \\ \multicolumn{5}{c}{\text{Second Partial}} \\ \multicolumn{5}{c}{\text{Product}} \end{array}$$

D. Add the partial products

EXAMPLE:

$$\begin{array}{r} 174 \\ \times\ 42 \\ \hline 348 \\ +\ 696 \\ \hline 7308 \end{array} \text{ — Answer (Product)}$$

INFORMATION SHEET

VII. Dividing whole numbers

A. Set up problem by writing original number (number to be divided) inside a division frame, and by writing divisor (number you are dividing by) outside frame

EXAMPLE: How many times will 34 go into 3347?

Divisor $34\overline{)3347}$ Original Number

B. Determine how many times the divisor will go into the first digit of the original number; if it will not, write a zero in the answer space directly above the first digit, and then determine how many times the divisor will go into the first two numbers of the original number

(NOTE: Continue trying to divide the original number by the divisor until a set of digits can be divided. Remember to write a zero each time the set of digits cannot be divided.)

EXAMPLE:

$$\begin{array}{r} 0 \\ 34\overline{)3347} \end{array}$$

34 goes into 3 zero times.

$$\begin{array}{r} 00 \\ 34\overline{)3347} \end{array}$$

34 goes into 33 zero times.

$$\begin{array}{r} 009 \\ 34\overline{)3347} \end{array}$$

34 goes into 334 nine times.

C. Multiply the divisor by the answer (digit above frame); write this answer under the digit(s) that divisor went into, and subtract

EXAMPLE:

$$\begin{array}{r} 34 \\ \underline{\times\ 9} \\ 306 \end{array}$$

Multiply divisor (34) by answer (9).

$$\begin{array}{r} 009 \\ 34\overline{)3347} \\ \underline{-\ 306} \\ 28 \end{array}$$

Write answer under 334, the digits divisor went into, and subtract.

D. Bring down next unused digit from original number, and place it to the right of the subtracted difference (remainder)—even if the remainder is zero

EXAMPLE:

$$\begin{array}{r} 009 \\ 34\overline{)3347} \\ \underline{306\downarrow} \\ 287 \end{array}$$

INFORMATION SHEET

E. Determine how many times the divisor will go into this new number; write your answer in the answer space above the digit that was brought down

EXAMPLE:

```
      0098
   34)3347
      306
       287
```

F. Multiply the divisor by the last digit you wrote in the answer; write this product under the digits that divisor went into, and subtract

EXAMPLE:

```
    34    Multiply divisor (34) by
   x 8    last digit of answer (8).
   272
```

```
     0098
  34)3347
      306    Write product under 287, the digits that divisor went
      287    went into, and subtract.
    - 272
       15
```

G. Continue this process until all numbers in the original number are used

H. Write any remaining subtracted difference as a remainder

EXAMPLE:

```
    0098
  34)3347
     306
      287
      272
       15 Remainder
```

I. Check your answer by multiplying your answer times the divisor and adding the remainder to this number

(NOTE: If you have solved the problem correctly, your check answer should be the same as your original number.)

EXAMPLE:

```
       98    Answer
      x34    Divisor
      392
     294
     3332
    +  15    Remainder
     3347    Check Answer (Same as original number)
```

INFORMATION SHEET

VIII. Types of fractions

A. **Proper** — Top number of fraction (numerator) is smaller than bottom number of fraction (denominator)

EXAMPLE: $\frac{7}{8}$ Numerator / Denominator

B. **Improper** — Top number of fraction (numerator) is equal to or larger than bottom number of fraction (denominator)

EXAMPLES: $\frac{9}{8}$ $\frac{16}{16}$

C. **Mixed number** — Contains a whole number and a proper fraction

EXAMPLES: $9\frac{1}{2}$, $1\frac{7}{8}$, $4\frac{3}{4}$

IX. Reducing fractions to lowest terms — Divide the numerator and denominator by the largest whole number that will go into each evenly

EXAMPLE: Reduce $\frac{4}{16}$ to its lowest terms.

$$\frac{4}{16} = \frac{4 \div 4}{16 \div 4} = \frac{1}{4}$$

(NOTE: The fraction $\frac{1}{4}$ is reduced to its lowest term because the numerator [1] and the denominator [4] cannot be divided by the same number.)

X. Converting mixed numbers to improper fractions

A. Multiply the whole number by the denominator of the fraction

EXAMPLE: Convert $4\frac{3}{8}$ to an improper fraction.

$8 \times 4 = 32$

B. Add your answer to the numerator

EXAMPLE: $32 + 3 = 35$

C. Place this sum over the original denominator

EXAMPLE: $\frac{35}{8}$ Improper Fraction

INFORMATION SHEET

XI. Convert improper fractions to mixed numbers

A. Divide the numerator by the denominator

EXAMPLE: Convert 18/15 to a mixed number.

$$\begin{array}{r} 01 \\ 15\overline{)18} \\ \underline{15} \\ 3 \end{array} \text{ Remainder}$$

B. Place the remainder over the denominator

EXAMPLE: $\frac{3}{15}$ $\begin{array}{l}\text{— Remainder}\\ \text{— Denominator}\end{array}$

C. Reduce this fraction if necessary

EXAMPLE: $\frac{3}{15} = \frac{3 \div 3}{15 \div 3} = \frac{1}{5}$

D. Add the reduced fraction to the whole number obtained by dividing the numerator by the denominator

EXAMPLE: $1 + \frac{1}{5} = 1\frac{1}{5}$ Mixed Number

XII. Adding fractions

A. Like fractions

(NOTE: Like fractions are those having the same, or common, denominators.)

EXAMPLES: 1/4 and 2/4, 5/8 and 5/8, 1/16 and 3/16

1. Add the numerators
2. Place sum of numerators over common denominator
3. Convert to mixed numbers and reduce as required

EXAMPLE 1: Add 1/4 and 2/4.

$$\frac{1}{4} + \frac{2}{4} = \frac{1+2}{4} = \frac{3}{4}$$

EXAMPLE 2: Add 5/8 and 5/8.

$$\frac{5}{8} + \frac{5}{8} = \frac{5+5}{8} = \frac{10}{8} = 10 \div 8 = 1\frac{2}{8} = 1\frac{1}{4}$$

INFORMATION SHEET

EXAMPLE 3: Add $^1/_{16}$ and $^3/_{16}$.

$$\frac{1}{16} + \frac{3}{16} = \frac{1+3}{16} = \frac{4}{16} = \frac{4 \div 4}{16 \div 4} = \frac{1}{4}$$

B. Unlike fractions

EXAMPLES: $^{11}/_{12}$ and $^3/_9$, $^1/_8$ and $^3/_4$

1. Change to like fractions

a. Find the lowest number into which each denominator can be divided evenly (lowest common denominator)

b. Multiply the numerators and denominators of each fraction by the number of times its denominator can be divided into the lowest common denominator

EXAMPLE 1: Add $^{11}/_{12}$ and $^3/_9$.

36 is lowest number into which both 12 and 9 can be divided evenly.

$36 \div 12 = 3$

$36 \div 9 = 4$

$$\frac{11}{12} = \frac{11 \times 3}{12 \times 3} = \frac{33}{36}$$

$$\frac{3}{9} = \frac{3 \times 4}{9 \times 4} = \frac{12}{36}$$

EXAMPLE 2: Add $^1/_8$ and $^3/_4$.

8 is the lowest number into which both 8 and 4 can be divided evenly.

$8 \div 8 = 1$

$8 \div 4 = 2$

$\frac{1}{8}$ remains as $^1/_8$ because 8 is the common denominator.

$$\frac{3}{4} = \frac{3 \times 2}{4 \times 2} = \frac{6}{8}$$

INFORMATION SHEET

2. Add as like fractions and reduce or convert to mixed numbers as required

EXAMPLE 1: Add $^{11}/_{12}$ and $^{3}/_{9}$.

$$\frac{11}{12} = \frac{33}{36} \text{ and } \frac{3}{9} = \frac{12}{36}$$

$$\frac{33}{36} + \frac{12}{36} = \frac{33 + 12}{36} = \frac{45}{36} = \frac{5}{4} = 1\frac{1}{4}$$

EXAMPLE 2: Add $^{1}/_{8}$ and $^{3}/_{4}$.

$$\frac{1}{8} \text{ remains } \frac{1}{8} \text{ and } \frac{3}{4} = \frac{6}{8}$$

$$\frac{1}{8} + \frac{6}{8} = \frac{1 + 6}{8} = \frac{7}{8}$$

C. Mixed numbers

1. Add whole numbers

2. Add fractions, first finding common denominators if necessary, and reduce or convert to mixed numbers as necessary

3. Add the sums of steps 1 and 2

EXAMPLE 1: Add $3^{1}/_{8}$ and $7^{3}/_{8}$.

$3 + 7 = 10$ Add whole numbers.

$\frac{1}{8} + \frac{3}{8} = \frac{1 + 3}{8} = \frac{4}{8} = \frac{1}{2}$ Add fractions and reduce.

$10 + \frac{1}{2} = 10\frac{1}{2}$ Add the sums of steps 1 and 2.

EXAMPLE 2: Add $4^{2}/_{3}$ and $1^{5}/_{6}$.

$4 + 1 = 5$ Add whole numbers.

$\frac{2}{3} + \frac{5}{6} = \frac{4}{6} + \frac{5}{6}$ Find common denominator.

$\frac{4}{6} + \frac{5}{6} = \frac{9}{6} = 1\frac{3}{6} = 1\frac{1}{2}$ Add fractions, convert to mixed number, and reduce.

$5 + 1\frac{1}{2} = 6\frac{1}{2}$ Add sums of steps 1 and 2.

INFORMATION SHEET

XIII. Subtracting fractions

A. Like fractions

1. Subtract smaller numerator from larger numerator

   EXAMPLE: Subtract $^1/_{16}$ from $^7/_{16}$.

   $7 - 1 = 6$

2. Place subtraction answer over common denominator

   EXAMPLE: $\frac{6}{16}$

3. Reduce to lowest terms as required

   EXAMPLE: $\frac{6}{16} = \frac{3}{8}$

B. Unlike fractions

1. Change to like fractions

   EXAMPLE: Subtract $^1/_2$ from $^3/_4$.

   $\frac{3}{4}$ remains the same because 4 is the common denominator.

   $\frac{1}{2} = \frac{1 \times 2}{2 \times 2} = \frac{2}{4}$

2. Subtract as for like fractions

   EXAMPLE: $\frac{3}{4} - \frac{2}{4} = \frac{3-2}{4} = \frac{1}{4}$

3. Reduce to lowest terms as required

C. Mixed numbers

1. Convert fractions in mixed numbers to like fractions if necessary

   EXAMPLE: Subtract $3^1/_2$ from $5^1/_8$.

   $5\frac{1}{8} - 3\frac{1}{2} = 5\frac{1}{8} - 3\frac{4}{8}$

2. Borrow a one from the original whole number if needed, convert the one to a like fraction, and add it to the smaller fraction

(NOTE: This step is needed only if the like fraction in the original number is smaller than the like fraction in the subtracted number.)

EXAMPLE: $5\frac{1}{8} - 3\frac{4}{8} = (4\frac{8}{8} + \frac{1}{8}) - 3\frac{4}{8} = 4\frac{9}{8} - 3\frac{4}{8}$

3. Subtract whole number from whole number and like fraction from like fraction

EXAMPLE: $4\frac{9}{8} - 3\frac{4}{8} = 1\frac{5}{8}$

XIV. Multiplying fractions

A. Convert any mixed numbers to improper fractions

B. Multiply numerators by numerators and denominators by denominators

C. Write the product of the numerators over the product of the denominators

D. Convert improper fractions to mixed numbers and reduce as required

EXAMPLE 1: Multiply $1/2$ by $3/4$.

$$\frac{1}{2} \times \frac{3}{4} = \frac{1 \times 3}{2 \times 4} = \frac{3}{8}$$

EXAMPLE 2: Multiply $1\,1/4$ by $1/2$.

$1\frac{1}{4} = \frac{5}{4}$ Convert to improper fraction.

$$\frac{5}{4} \times \frac{1}{2} = \frac{5 \times 1}{4 \times 2} = \frac{5}{8}$$

XV. Dividing fractions

A. Convert any mixed numbers to improper fractions

EXAMPLE: Divide $1\,3/4$ by $2/3$.

$1\frac{3}{4} = \frac{7}{4}$ Convert to improper fraction.

INFORMATION SHEET

B. Invert the divisor and multiply

EXAMPLE: $\frac{7}{4} \div \frac{2}{3} = \frac{7}{4} \times \frac{3}{2} = \frac{21}{8}$

(NOTE: If the divisor is a whole number, place it over 1 and invert.)

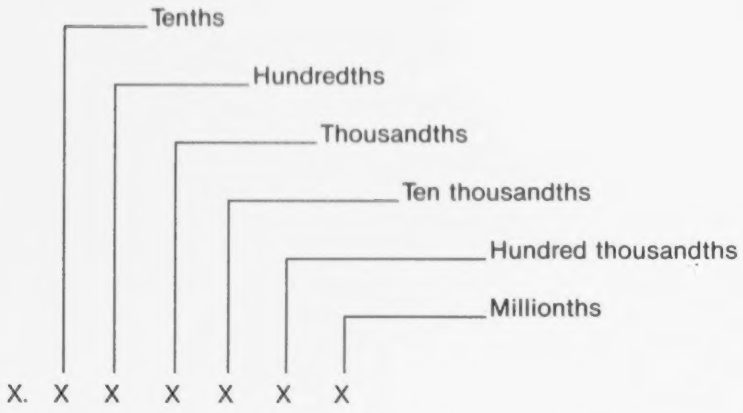
EXAMPLE: Divide $4\frac{3}{4}$ by 3.

$$\frac{19}{4} \div \frac{3}{1} = \frac{19}{4} \times \frac{1}{3}$$

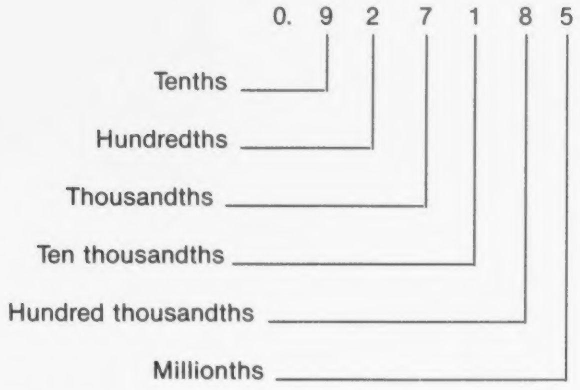
C. Convert improper fraction to a mixed number and reduce as required

EXAMPLE: $\frac{21}{8} = 2\frac{5}{8}$

XVI. Place values of decimal numbers


Tenths
Hundredths
Thousandths
Ten thousandths
Hundred thousandths
Millionths
X. X X X X X X

EXAMPLE:


0. 9 2 7 1 8 5
Tenths
Hundredths
Thousandths
Ten thousandths
Hundred thousandths
Millionths

(NOTE: The number in the example is read as nine hundred twenty-seven thousand, one hundred eighty-five millionths.)

INFORMATION SHEET

XVII. Adding decimal numbers

A. Set up problem as for addition of whole numbers, aligning decimal points directly under each other

(NOTE: Zeros may be added to ensure that units line up under units, tens under tens, and so on. Whole numbers have an understood decimal point to the right of the units digit: 7 is 7., 75 is 75., and 754 is 754.)

EXAMPLE: Add 0.857, 2.1, 753, and 370.057.

$$\begin{array}{r} 0.857 \\ 2.1 \\ 753 \\ \underline{+\ 370.057} \end{array} \quad \text{or} \quad \begin{array}{r} 000.857 \\ 002.100 \\ 753.000 \\ \underline{+\ 370.057} \end{array}$$

B. Add each column of numbers as for whole numbers

C. Locate the decimal point in the answer by placing it directly under the decimal points above

EXAMPLE:

$$\begin{array}{rl} 000.857 & \\ 002.100 & \\ 753.000 & \\ \underline{+\ 370.057} & \\ 1126.014 & \text{Answer} \end{array}$$

XVIII. Subtracting decimal numbers

A. Set up problem as for subtraction of whole numbers, aligning decimal points directly under each other

EXAMPLE: Subtract 1.397 from 8.120.

$$\begin{array}{rl} 8.120 & \text{Original Number} \\ \underline{-\ 1.397} & \text{Subtracted Number} \end{array}$$

B. Subtract each column of numbers as for whole numbers

C. Locate the decimal point in the answer by placing it directly under the decimal points above

INFORMATION SHEET

D. Check your subtraction by adding your answer to the subtracted number

(NOTE: If you have solved the problem correctly, your check answer should be the same as the original number.)

EXAMPLE:	8.120	Original Number
	− 1.397	Subtracted Number
	+ 6.723	Answer (Difference)
	8.120	Check Answer

XIX. Multiplying decimal numbers

A. Set up problem and multiply as for multiplication of whole numbers

(NOTE: Do *not* align the decimal points in columns when setting up multiplication problems for decimal numbers.)

EXAMPLE: Multiply 27.935 by 7.07.

27.935	Original Number
× 7.07	Multiplier
195545	
1955450	
19750045	

B. Add the number of decimal places to the right of the decimal points in the multiplier and original number

EXAMPLE:	27.935	3	Decimal Places
	× 7.07	+2	Decimal Places
		5	Total Decimal Places

C. Locate decimal point in answer by beginning at far right digit and counting off as many places to the left as the total decimal places found in step B

EXAMPLE:	27.935	
	× 7.07	
	195545	
	1955450	
	197.50045	5 Decimal Places

XX. Dividing decimal numbers

A. Set up problem as for division of whole numbers

EXAMPLE: Divide 0.25 by 0.005.

Divisor $0.005\overline{)0.25}$ Original Number

INFORMATION SHEET

B. Move the decimal point in the divisor to the right of the far right digit in the divisor

EXAMPLE: $0.\underset{\curvearrowright}{005}.\overline{)0.25}$

C. Move the decimal point in the original number to the right by the same number of decimal places that you moved the decimal point in the divisor, adding zeros to the original number if necessary

EXAMPLE: $0.\underset{\curvearrowright}{005}.\overline{)0.\underset{\curvearrowright}{250}.}$

(NOTE: If you are dividing a decimal number into a whole number, remember that whole numbers have an understood decimal point to the right of the units digit.)

EXAMPLE: $0.03\overline{)9}$ becomes $0.\underset{\curvearrowright}{03}.\overline{)9.\underset{\curvearrowright}{00}.}$

D. Place a decimal point in the answer space directly above the repositioned decimal point in the original number

EXAMPLE: $\begin{array}{l} \qquad\qquad\qquad\;\; .\longleftarrow \\ 0.\underset{\curvearrowright}{005}.\overline{)0.\underset{\curvearrowright}{250}.} \end{array}$

E. Divide as for whole numbers

EXAMPLE: $\begin{array}{r} 50. \\ 0005.\overline{)0250.} \\ \underline{025} \\ 00 \end{array}$

F. Check your division by multiplying the original divisor (before decimal point was moved) by your answer and adding any remainder to this number

(NOTE: If you have solved the problem correctly, your check answer should be the same as the original number.)

EXAMPLE:

	0.005	Divisor
	× 50	Answer
	0.250	Check Answer (Same as original number)

INFORMATION SHEET

XXI. Converting fractions to decimals and percentages

A. Fractions to decimals — Divide the numerator by the denominator

EXAMPLE: Convert 5/8 to a decimal.

$\underline{5}$	Numerator
8	Denominator

$$
\begin{array}{r}
0.625 \\
8\overline{)5.000} \\
\underline{4\,8} \\
20 \\
\underline{16} \\
40 \\
\underline{40} \\
0
\end{array}
$$

B. Fractions to percentages

(NOTE: Percent means that a number is a fraction of 100.)

1. Convert the fractions to decimals by dividing numerator by denominator
2. Move the decimal point in the answer two places to the right
3. Place the percent symbol after the number

EXAMPLE: Convert 7/33 to a percentage.

$\underline{7}$	Numerator
33	Denominator

$$
\begin{array}{r}
0.2121 \\
33\overline{)7.0000} \\
\underline{6\,6} \\
40 \\
\underline{33} \\
70 \\
\underline{66} \\
40 \\
\underline{33} \\
7
\end{array}
= 21.21\%
$$

INFORMATION SHEET

XXII. Converting percentages to fractions and decimal numbers

A. Percentages to fractions

1. Drop the percent symbol

2. Place the number over 100

3. Reduce to lowest terms if necessary

EXAMPLE: Convert 38% to a fraction.

$$38\% = 38$$
$$= \frac{38}{100}$$
$$= \frac{19}{50}$$

B. Percentages to decimals

1. Drop the percent symbol

2. Move decimal point two places to left

EXAMPLE: Convert 74% to a decimal.

$$74\% = 74$$
$$= 0.74$$

XXIII. Solving percentage problems

(NOTE: Percentage problems may involve solving for the percent ["16 is what percent of 80?"], the part ["What number is 20% of 80?"], or the whole ["16 is 20% of what number?"].)

A. Write the unknown as "X"

EXAMPLE: 16 is what percent of 80?

16 is X percent of 80.

(NOTE: The unknown may be the percent, the part, or the whole.)

B. Write the percent (known or unknown) as a fraction with a denominator of 100

EXAMPLE: 16 is $\frac{X}{100}$ percent of 80.

INFORMATION SHEET

C. Write the part and the whole as a fraction, writing the part as the numerator and the whole as the denominator

EXAMPLE: $\frac{16}{80}$ $\frac{\text{Part}}{\text{Whole}}$

D. Set up the equation by writing the two fractions with an equal sign between them

EXAMPLE: $\frac{X}{100} = \frac{16}{80}$

E. Solve the equation by multiplying the numerator of each fraction by the denominator of the other

(NOTE: This process is known as *cross multiplying*.)

EXAMPLE: $\frac{X}{100} = \frac{16}{80}$

$80X = 1600$

F. Divide each side of the equation by the multiplier of X

EXAMPLE: $80X = 1600$

$X = 20\%$

16 is 20% of 80.

XXIV. Solving ratio and proportion problems — To increase or decrease proportionally, multiply or divide each number in the ratio by the same number

(NOTE: Ratio indicates parts of material per mix; proportion indicates that the ratio is the same but the quantity may differ.)

EXAMPLE 1: You want to find half of the ratio 1:1:3.

Divide each number in the ratio by 2 to get 0.5:0.5:1.5.

EXAMPLE 2: You need three times the ratio 1:1:3.

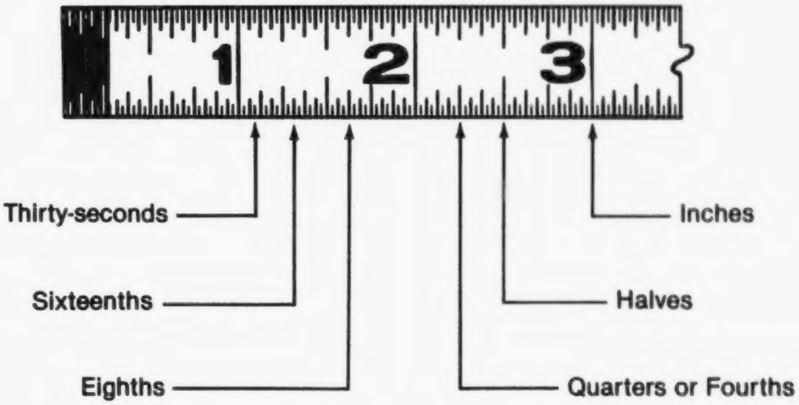
Multiply each number in the ratio by 3 to get 3:3:9.

INFORMATION SHEET

XXV. Graduations on a rule (Figure 3)

(NOTE: Some rules will not have all of the graduations shown in Figure 3.)

FIGURE 3



(NOTE: Thirty-two 32nds equal 1 inch. Sixteen 16ths equal 1 inch. Eight 8ths equal 1 inch. Four 4ths equal 1 inch. Two halves equal 1 inch. Twelve inches equal 1 foot.)

XXVI. Reading a rule to the nearest fraction of an inch

(NOTE: All rules are read similarly. However, some rules are graduated with more divisions per inch than others, and some rules may have special markings for specific purposes.)

A. Align the end of the rule with one reference point

B. Determine the number of whole units between end of rule and second reference point

C. Determine the number of fractional units between last whole unit and second reference point

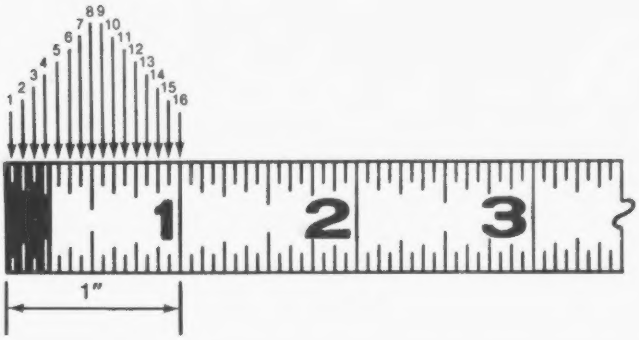
INFORMATION SHEET

1. Determine number of graduations per inch (Figure 4)

   (NOTE: At first you may have to count the number of divisions in an inch. However, with some practice, you will be able to recognize the divisions on sight and will eventually be able to determine fractional units just by looking at the rule.)

   EXAMPLE:

FIGURE 4

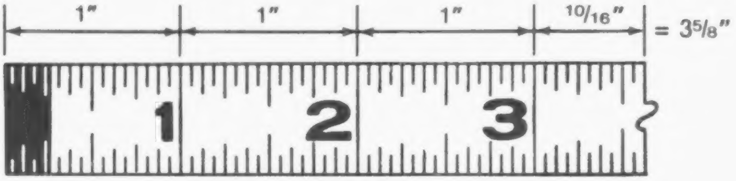


2. Determine the fractional part of an inch by counting the number of divisions between last inch and second reference point

3. Reduce the fraction if possible (Figure 5)

   EXAMPLE:

FIGURE 5



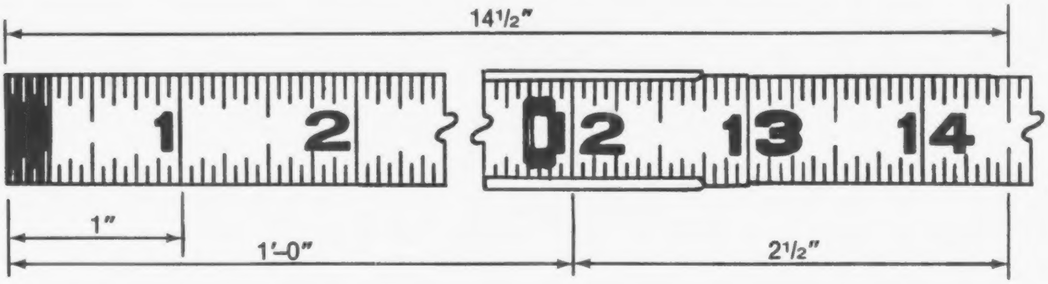
(NOTE: In the example above, the rule is divided into sixteenths. There are ten divisions between the last inch mark—3 inches—and the reference point. The $^{10}/_{16}$ can be reduced to $^{5}/_{8}$.)

INFORMATION SHEET

D. Determine the reading by adding fractional units to whole units and converting inches to feet or feet to inches if necessary (Figure 6)

EXAMPLE: The rule below shows a measurement of 1′ – 2½″ or 14½″.

FIGURE 6



XXVII. Roman numerals (Table 1)

(NOTE: We use Arabic numerals more than we use Roman numerals, but knowing Roman numerals is important also. Roman numerals are used in the apothecaries' system of weight and are often used in health careers.)

TABLE 1

ARABIC NUMERALS	ROMAN NUMERALS	INTERPRETATION
1	I	1
2	II	1+1=2
3	III	1+1+1=3
4	IV	5–1=4
5	V	5
6	VI	5+1=6
7	VII	5+1+1=7
8	VIII	5+1+1+1=8
9	IX	10–1=9
10	X	10
14	XIV	10+(5–1)=14
19	XIX	10+(10–1)=19
20	XX	10+10=20
25	XXV	10+10+5=25
40	XL	50–10=40
41	XLI	(50–10)+1=41
50	L	50
60	LX	50+10=60
89	LXXXIX	50+10+10+10+(10–1)=89
90	XC	100–10=90
100	C	100

INFORMATION SHEET

A. When a letter representing a smaller (or equal) number is behind a larger one, add the smaller (or equal) one to the larger one

EXAMPLES: VI = 5 + 1 XX = 10 + 10
LV = 50 + 5

B. When a letter representing a smaller number is in front of a larger one, subtract the smaller one from the larger one

EXAMPLES: IV = 5 − 1
XL = 50 − 10

C. Never repeat a letter more than three times in a row

EXAMPLE: III (3) VIII (8) XXXIX (39)
IV (4) IX (9) XL (40)

BASIC MATHEMATICS
UNIT I

ASSIGNMENT SHEET #1 — ADD WHOLE NUMBERS

NAME ______________________________ SCORE ______________

Like most people, you probably use addition every day. For example, today you probably added coins together to pay for sodas and snacks. Every time you add, you use basic addition facts. The following exercises will form part of your math background and serve as a basis for completing other exercises and problems.

EXAMPLES:

$$\begin{array}{r} 5 \\ +\ 10 \\ \hline 15 \end{array} \qquad \begin{array}{r} {\scriptstyle 1} \\ 67 \\ +\ 25 \\ \hline 92 \end{array} \leftarrow \text{Carried Digit} \qquad \begin{array}{r} {\scriptstyle 11} \\ 539 \\ 333 \\ +\ 432 \\ \hline 1304 \end{array} \leftarrow \text{Carried Digits}$$

Solve each of the following addition problems. Refer to Information Sheet, Section IV if necessary, and show your work.

PART I

A. $\begin{array}{r} 2 \\ +\ 9 \\ \hline \end{array}$ B. $\begin{array}{r} 8 \\ +\ 8 \\ \hline \end{array}$ C. $\begin{array}{r} 7 \\ +\ 6 \\ \hline \end{array}$ D. $\begin{array}{r} 15 \\ +\ 8 \\ \hline \end{array}$ E. $\begin{array}{r} 81 \\ +\ 27 \\ \hline \end{array}$

F. $\begin{array}{r} 7 \\ 38 \\ +\ 43 \\ \hline \end{array}$ G. $\begin{array}{r} 55 \\ 88 \\ +\ 99 \\ \hline \end{array}$ H. $\begin{array}{r} 341 \\ 428 \\ +\ 769 \\ \hline \end{array}$ I. $\begin{array}{r} 472 \\ 564 \\ +\ 881 \\ \hline \end{array}$ J. $\begin{array}{r} 9876 \\ 5432 \\ +\ 1122 \\ \hline \end{array}$

PART II

A. If a pharmacist dispensed 330 tablets one day, 570 tablets the next day, and 275 the next, how many tablets did she dispense?

Total tablets ____________

B. A secretary ordered the following numbers of copies on different dates: 256, 62, 575, and 242. How many copies did she order?

Total copies ____________

ASSIGNMENT SHEET #1

C. If a doctor paid $480 for equipment, $13 for office supplies, $81 for utility bills, $35 for brochures, what was the total expenditure?

Total cost ____________

D. A large wellness center is opening in town. If the center has a large room with 7425 square feet of space and four smaller rooms with 1135 square feet, 1225 square feet, 1220 square feet, and 1125 square feet of space, how much total square feet of space does the center have?

Total square feet ____________

BASIC MATHEMATICS
UNIT I

ASSIGNMENT SHEET #2 — SUBTRACT WHOLE NUMBERS

NAME ______________________________ SCORE ______________

Addition is the first fundamental operation in mathematics. Subtraction, the opposite of addition, is the process of finding the difference between two numbers. It is the second fundamental operation. You can check the accuracy of the answer obtained in a subtraction problem by simply adding the difference to the subtracted number. The sum of these two numbers will equal the original number if the answer is correct.

EXAMPLES:

12	Original Number	57	Original Number
− 7	Subtracted Number	− 35	Subtracted Number
+ 5	Answer (Difference)	+ 22	Answer (Difference)
12	Check Answer (Same as original number)	57	Check Answer

PART I

Solve each of the following subtraction problems. Check your answers by adding the difference to the subtracted number. Refer to Information Sheet, Section V if necessary, and show your work.

A.	B.	C.	D.	E.
9	15	75	453	742
− 5	− 8	− 22	− 47	− 318

F.	G.	H.	I.	J.
981	1420	3459	55722	98679
− 698	− 245	− 1649	− 4272	− 8957

PART II

A. A clinic uses 172 towels a week. The clinic has 46 towels of its own and contracts with a linen service for the rest. How many towels does the linen service provide per week?

Number of towels ____________

ASSIGNMENT SHEET #2

B. You live in an area with a rapidly growing population. A recent study projects that five years from now your local medical center will need 1702 beds. The medical center has 542 beds at present time. How many more beds will be needed?

Number of beds ____________

C. In its first year of operation, a surgical suite handled 1219 surgeries. During the second year, the surgeries increased to 2167. How many more surgeries did the surgical suite do in the second year?

Number of surgeries ____________

D. Major dental work on a client cost $450. The dentist agreed to accept payments spread out over a three-month period. The client paid $124 the first month and $192 the second month. How much did the client owe for the third payment?

Amount ____________

BASIC MATHEMATICS
UNIT I

ASSIGNMENT SHEET #3 — MULTIPLY WHOLE NUMBERS

NAME ____________________ SCORE ____________

Multiplication is the third basic operation in mathematics. It is a shortcut method of adding. For example, if you correctly add twelve 12s, the result will be 144, the same as 12 multiplied by 12. Some multiplication problems involve carrying. You may write down the carried digits, or simply remember them. Use the method that works best for you.

When multiplying by numbers that contain two or more digits, you must be careful to align the partial products properly. Write the right-hand digit of each partial product directly below the multiplying digit. This causes the partial products to be properly aligned so that tens will be added to tens, hundreds to hundreds, and so on.

EXAMPLES:

$$\begin{array}{r} 8 \\ \times\ 7 \\ \hline 56 \end{array} \qquad \begin{array}{rl} 1 & \leftarrow \text{Carried Digit} \\ 53 & \\ \times\ \ 4 & \\ \hline 212 & \end{array} \qquad \begin{array}{rl} 11\ \ \ & \leftarrow \text{Carried Digits} \\ 756 & \\ \times\ 312 & \\ \hline 1512 & \leftarrow \text{First Partial Product} \\ 756\ & \leftarrow \text{Second Partial Product} \\ 2268\ \ \ & \leftarrow \text{Third Partial Product} \\ \hline 235872 & \leftarrow \text{Product} \end{array}$$

PART I

Solve each of the following multiplication problems. Refer to Information Sheet, Section VI if necessary, and show your work.

$$\text{A.}\ \begin{array}{r} 6 \\ \times\ 7 \\ \hline \end{array} \qquad \text{B.}\ \begin{array}{r} 9 \\ \times\ 8 \\ \hline \end{array} \qquad \text{C.}\ \begin{array}{r} 54 \\ \times\ \ 6 \\ \hline \end{array} \qquad \text{D.}\ \begin{array}{r} 721 \\ \times\ \ \ 4 \\ \hline \end{array} \qquad \text{E.}\ \begin{array}{r} 1682 \\ \times\ \ \ \ 5 \\ \hline \end{array}$$

$$\text{F.}\ \begin{array}{r} 78 \\ \times\ 26 \\ \hline \end{array} \qquad \text{G.}\ \begin{array}{r} 453 \\ \times\ \ 47 \\ \hline \end{array} \qquad \text{H.}\ \begin{array}{r} 314 \\ \times\ 527 \\ \hline \end{array} \qquad \text{I.}\ \begin{array}{r} 2143 \\ \times\ \ 235 \\ \hline \end{array} \qquad \text{J.}\ \begin{array}{r} 4123 \\ \times\ 1324 \\ \hline \end{array}$$

ASSIGNMENT SHEET #3

PART II

A. A roll of cotton wool contains 75 yards. How many yards of cotton wool are in six rolls?

Number of yards ____________

B. If a coding technician can transcribe an average of 170 codes per hour, how many codes can he transcribe in 48 hours?

Number of codes ____________

C. Six physicians in a clinic see an average of 950 clients per week. How many clients can they see during a three-week period?

Average number of clients ____________

D. Figure the amount of time worked in 4 weeks by 12 technicians who work 30 hours each week.

Hours worked ____________

BASIC MATHEMATICS
UNIT I

ASSIGNMENT SHEET #4 — DIVIDE WHOLE NUMBERS

NAME ______________________________ SCORE ______________

Division is the fourth and last basic operation in mathematics. Multiplication puts together—division takes apart. Division is the reverse of multiplication. Long division is the name used for division by numbers that cannot readily be used as simple dividers. Division answers are checked by multiplying the divisor by the answer and adding the remainder.

EXAMPLES: $\begin{array}{r} \text{Answer} \\ \text{Divisor}\,\overline{)\text{Original Number}} \end{array}$

$$\begin{array}{r} 324 \\ 3\,\overline{)972} \\ \underline{9} \\ 7 \\ \underline{6} \\ 12 \\ \underline{12} \end{array}$$

$$\begin{array}{rl} 0111 & \text{Answer} \\ 51\,\overline{)5678} & \\ \underline{51} & \\ 57 & \\ \underline{51} & \\ 68 & \\ \underline{51} & \\ 17 & \text{Remainder} \end{array} \qquad \text{Check:} \quad \begin{array}{rl} 111 & \text{Answer} \\ \underline{\times\ \ 51} & \text{Divisor} \\ 111 & \\ \underline{555} & \\ 5661 & \\ \underline{+\ \ 17} & \text{Remainder} \\ 5678 & \text{Original Number} \end{array}$$

PART I

Solve each of the following division problems. Check your answers by multiplying the divisor by the original number. Refer to Information Sheet, Section VII if necessary, and show your work.

A. $2\,\overline{)8}$ B. $6\,\overline{)48}$ C. $9\,\overline{)819}$ D. $4\,\overline{)1248}$ E. $13\,\overline{)39}$

ASSIGNMENT SHEET #4

F. $66\overline{)198}$ G. $84\overline{)5212}$ H. $124\overline{)345}$ I. $464\overline{)829}$ J. $746\overline{)2872}$

PART II

A. A physical therapist did 1456 treatments in one year. What was the average number of treatments per week? (There are 52 weeks in a year.)

Average number treatments per week ____________

B. A veterinarian contracted to immunize a herd of cattle for a rancher. If there are 56 cattle in the herd and the veterinarian has four hours in which to immunize them, how many cattle will she have to immunize per hour?

Number of cattle immunized per hour ____________

C. Last month a technician at the hospital used 2522 feet of impregnated plaster of Paris bandaging to make 26 casts. What was the average amount of bandaging used per cast?

Feet of bandaging per cast ____________

D. The Public Health Department is assessing ventilation in a restaurant. The inspectors find that all the air in the building must be changed every three minutes. How many fans will be required if each fan removes 1300 cubic feet of air per minute and the restaurant contains 15,600 cubic feet?

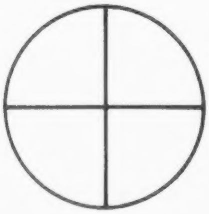
Number of fans needed ____________

BASIC MATHEMATICS
UNIT I

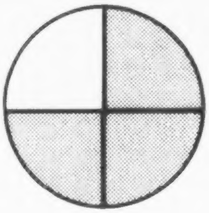
ASSIGNMENT SHEET #5 — WORK WITH FRACTIONS

NAME ______________________________ SCORE ______________

When something is divided into parts that are all the same size, or of equal size, it is divided into fractional parts. For example, the circle below is divided into four fractional parts.



To talk about fractional parts, you use fractions. For example, one of the four parts of the circle below is unshaded, or 1/4 of the circle is unshaded; three of the four parts of the circle are shaded, or 3/4 of the circle is shaded.



In the fraction 3/4, the 4 is called the denominator. It shows the number of equal parts into which the circle is divided. The 3 is called the numerator. It shows the number of parts that are used.

PART I

A. Fill in the blanks to identify the numerator and denominator of each of the following fractions. Refer to Information Sheet, Section VIII if necessary.

1. In the fraction 5/8, the numerator is ______ and the denominator is ______.
2. In the fraction 7/16, 7 is the ______________________ and 16 is the ______________________.

ASSIGNMENT SHEET #5

3. In the fraction 1/4, what is the numerator? ______ denominator? ______

B. Write the fractions that fit the following statements.

____________________1. A fraction with a denominator of 16 and a numerator of 10.

____________________2. A fraction with a numerator of 16 and a denominator of 32.

C. A technician cuts a piece of sheet metal into 8 equal pieces and then uses 1 of the 8 pieces.

____________________1. Which number represents the numerator?

____________________2. Which number represents the denominator?

____________________3. What fractional part of the sheet metal did the technician use?

PART II

A. Match the shaded portions of the following figures to the fractions they represent. Write the correct letters in the blanks.

______ 1. 4/8

______ 2. 2/2

______ 3. 6/16

______ 4. 3/8

______ 5. 5/8

______ 6. 1/2

______ 7. 7/16

______ 8. 3/4

______ 9. 1/4

______10. 1/8

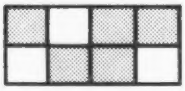
______11. 7/8

______12. 2/4

______13. 2/8

______14. 13/16

______15. 6/8

a.


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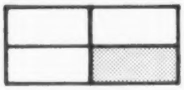

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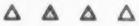

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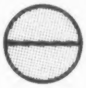

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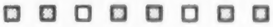

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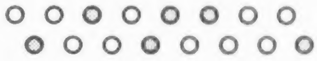

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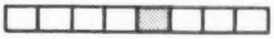

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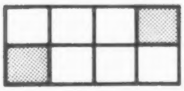

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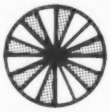

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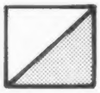

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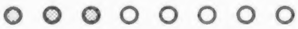
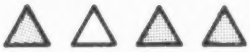


l.


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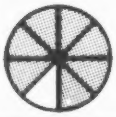

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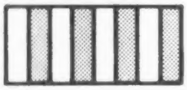
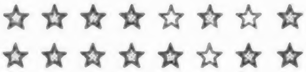
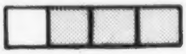


o.


ASSIGNMENT SHEET #5

B. Draw a figure shaded to represent each of the following fractions.

EXAMPLE: 3/4 

1. 1/2

6. 5/16

2. 3/4

7. 2/8

3. 5/8

8. 3/16

4. 1/4

9. 3/8

5. 7/8

10. 13/16

BASIC MATHEMATICS
UNIT I

ASSIGNMENT SHEET #6 — REDUCE FRACTIONS TO LOWEST TERMS

NAME ______________________________ SCORE ____________

Fractions are "reduced" to their lowest terms so that they are more readily understood or recognized. For example, $^1/_2$ is more easily recognized than $^{16}/_{32}$.

To reduce a fraction to its lowest terms, divide the numerator and the denominator by the largest whole number that will go into both evenly.

EXAMPLES: $\frac{9}{12} = \frac{9 \div 3}{12 \div 3} = \frac{3}{4}$ $\frac{12}{32} = \frac{12 \div 4}{32 \div 4} = \frac{3}{8}$

Reduce the following fractions to their lowest terms. Refer to Information Sheet, Section IX if necessary.

A. $^4/_8$ = ______

F. $^9/_{24}$ = ______

B. $^8/_{16}$ = ______

G. $^{16}/_{32}$ = ______

C. $^2/_2$ = ______

H. $^2/_4$ = ______

D. $^4/_{16}$ = ______

I. $^9/_{12}$ = ______

E. $^{12}/_{48}$ = ______

J. $^{50}/_{100}$ = ______

BASIC MATHEMATICS
UNIT I

ASSIGNMENT SHEET #7 — CONVERT UNLIKE FRACTIONS TO LIKE FRACTIONS

NAME ______________________________ SCORE ______________

Fractions must have common denominators if they are to be added or subtracted. Fractions that have the same denominator are said to have a *common* denominator and to be *like fractions.* The easiest way to find a common denominator for two fractions is to multiply the numerator and the denominator of each fraction by the denominator of the other fraction.

EXAMPLE: Find a common denominator for the fractions $1/4$ and $3/16$ and convert to like fractions.

$$\frac{1}{4} = \frac{1 \times 16}{4 \times 16} = \frac{16}{64} \quad \text{and} \quad \frac{3}{16} = \frac{3 \times 4}{16 \times 4} = \frac{12}{64}$$

Because a common denominator is any denominator into which the denominators of both fractions will divide evenly, two fractions can have many common denominators. Although it is easy to find common denominators by multiplying the denominators by one another, this often leads to numbers that are awkward to work with. For that reason, fractions are usually added after the *lowest* common denominator has been found.

EXAMPLE: Common denominators for the fractions $1/4$ and $3/16$ include 16, 32, 48, 64, 80, and many more.

$4/16$ and $3/16$
$8/32$ and $6/32$
$12/48$ and $9/48$
$16/64$ and $12/64$
$20/80$ and $15/80$

The lowest common denominator is the lowest one into which the others can be divided evenly. To find the lowest common denominator, find any common denominator by the method shown above, and reduce it.

EXAMPLE: Convert the fractions $6/15$ and $3/10$ to like fractions with the lowest common denominator.

$$\frac{6}{15} = \frac{6 \times 10}{15 \times 10} = \frac{60}{150} = \frac{12}{30} \quad \text{and} \quad \frac{3}{10} = \frac{3 \times 15}{10 \times 15} = \frac{45}{150} = \frac{9}{30}$$

ASSIGNMENT SHEET #7

To change a fraction to its equivalent with a higher denominator, multiply the denominator of the given fraction by a number that will give the desired denominator; then multiply the numerator of the fraction by the same multiplier.

EXAMPLE: You want to find out how many eighths there are in 1/2.

$\frac{1}{2 \times 4} = \frac{?}{8}$ Multiply the denominator by 4 to give you the eighths denominator.

$\frac{1}{2} = \frac{?}{8}$ $\quad\frac{1 \times 4}{2 \times 4} = \frac{4}{8}$ $\quad\frac{1}{2} = \frac{4}{8}$

To change a fraction to its equivalent with a lower denominator, divide both the denominator and the numerator by the same number.

EXAMPLE: You want to find out how many fourths there are in 12/16.

$\frac{12}{16} = \frac{?}{4}$ $\quad\frac{12 \div 4}{16 \div 4} = \frac{3}{4}$ $\quad\frac{12}{16} = \frac{3}{4}$

PART I

Convert each of the fractions below to equivalent fractions for the denominator given.

A. $\frac{1}{2} = \frac{}{8}$

B. $\frac{1}{4} = \frac{}{32}$

C. $\frac{12}{16} = \frac{}{4}$

D. $\frac{10}{32} = \frac{}{16}$

E. $\frac{6}{8} = \frac{}{4}$

F. $\frac{5}{8} = \frac{}{32}$

G. $\frac{9}{16} = \frac{}{32}$

H. $\frac{18}{32} = \frac{}{16}$

I. $\frac{3}{4} = \frac{}{8}$

J. $\frac{7}{8} = \frac{}{32}$

K. $\frac{24}{32} = \frac{}{4}$

L. $\frac{28}{64} = \frac{}{16}$

PART II

Multiply the denominators in the following sets of fractions to convert them to like fractions.

A. $\frac{3}{8}$ and $\frac{1}{2}$ = __________ and __________

B. $\frac{3}{4}$ and $\frac{9}{32}$ = __________ and __________

ASSIGNMENT SHEET #7

C. $\frac{1}{16}$ and $\frac{5}{8}$ = __________ and __________

D. $\frac{1}{2}$ and $\frac{7}{16}$ = __________ and __________

E. $\frac{3}{4}$ and $\frac{9}{16}$ and $\frac{7}{32}$ = __________ and __________ and __________

PART III

Change the following sets of fractions to like fractions with the *lowest* common denominators.

A. $\frac{3}{10}$ and $\frac{1}{4}$ = __________ and __________

B. $\frac{2}{3}$ and $\frac{3}{16}$ = __________ and __________

C. $\frac{3}{4}$ and $\frac{9}{32}$ = __________ and __________

D. $\frac{1}{2}$ and $\frac{7}{16}$ = __________ and __________

E. $\frac{3}{4}$ and $\frac{5}{8}$ and $\frac{7}{10}$ = __________ and __________ and __________

BASIC MATHEMATICS
UNIT I

ASSIGNMENT SHEET #8 — CONVERT FRACTIONS AND MIXED NUMBERS

NAME ____ SCORE ________________

A fraction such as $^{3}/_{4}$ is called a *proper fraction* because its numerator (top number) is smaller than its denominator (bottom number). Some examples of proper fractions are $^{2}/_{3}$, $^{1}/_{5}$, and $^{7}/_{8}$.

When the numerator of a fraction is the same, or larger, than the denominator, the fraction is called an *improper fraction*. Some examples of improper fractions are $^{4}/_{4}$, $^{5}/_{3}$, $^{9}/_{4}$, and $^{10}/_{8}$.

Numbers such as $2^{1}/_{2}$, $5^{3}/_{4}$, and $6^{2}/_{5}$ are called *mixed numbers*. They are made up of a whole number and a proper fraction.

Complete the following exercises. Refer to Information Sheet, Sections VIII, X, and XI if necessary.

PART I

A. Distinguish among the following fractions by writing a "P" in the blanks before a proper fraction, an "I" before an improper fraction, and an "M" in the blanks before a mixed number.

______ 1. $^{1}/_{2}$

______ 2. $3^{7}/_{8}$

______ 3. $^{16}/_{2}$

______ 4. $3^{1}/_{8}$

______ 5. $^{1}/_{4}$

______ 6. $^{1}/_{1}$

______ 7. $^{7}/_{2}$

______ 8. $8^{1}/_{2}$

______ 9. $^{4}/_{4}$

______10. $9^{3}/_{16}$

______11. $5^{1}/_{2}$

______12. $^{9}/_{8}$

______13. $^{9}/_{4}$

______14. $^{1}/_{8}$

______15. $16^{3}/_{4}$

B. Write a numerator over each of the following denominators to make proper fractions.

1. $\frac{}{8}$

2. $\frac{}{4}$

3. $\frac{}{32}$

4. $\frac{}{2}$

5. $\frac{}{16}$

ASSIGNMENT SHEET #8

C. Write a numerator over each of the following denominators to make improper fractions.

1. $\frac{}{2}$
2. $\frac{}{4}$
3. $\frac{}{16}$
4. $\frac{}{8}$
5. $\frac{}{4}$

PART II

A. Convert each of the following mixed numbers to improper fractions. Reduce to lowest terms when possible.

1. $3\frac{1}{4}$ = ______
2. $4\frac{1}{2}$ = ______
3. $7\frac{3}{4}$ = ______
4. $8\frac{1}{2}$ = ______
5. $6\frac{1}{8}$ = ______
6. $5\frac{2}{4}$ = ______
7. $4\frac{1}{4}$ = ______
8. $8\frac{1}{2}$ = ______
9. $9\frac{1}{4}$ = ______
10. $16\frac{1}{2}$ = ______

B. Convert each of the following improper fractions to mixed numbers. Reduce to lowest terms when possible.

1. $\frac{7}{4}$ = ______
2. $\frac{9}{2}$ = ______
3. $\frac{6}{4}$ = ______
4. $\frac{15}{8}$ = ______
5. $\frac{19}{16}$ = ______
6. $\frac{11}{8}$ = ______
7. $\frac{75}{32}$ = ______
8. $\frac{5}{2}$ = ______
9. $\frac{15}{4}$ = ______
10. $\frac{33}{16}$ = ______

BASIC MATHEMATICS
UNIT I

ASSIGNMENT SHEET #9 — ADD FRACTIONS

NAME ______________________________ SCORE ______________

To add common fractions, change the fractions to equivalent fractions with lowest common denominators. Add the new numerators and place this sum over the lowest common denominator. If the result is an improper fraction, change it to a mixed number and reduce to lowest terms.

EXAMPLE: $\frac{2}{3} + \frac{3}{4} = \frac{8}{12} + \frac{9}{12} = \frac{17}{12} = 1\frac{5}{12}$

Find common denominators and add the following fractions. Reduce to lowest terms. Refer to Information Sheet, Section XII if necessary.

A. $\frac{1}{4} + \frac{2}{8} =$ ____________

E. $\frac{3}{4} + \frac{5}{32} =$ ____________

B. $\frac{4}{16} + \frac{3}{4} =$ ____________

F. $\frac{7}{8} + \frac{5}{16} =$ ____________

C. $\frac{5}{8} + \frac{3}{32} =$ ____________

G. $\frac{9}{16} + \frac{3}{4} =$ ____________

D. $\frac{9}{16} + \frac{5}{8} =$ ____________

H. $\frac{4}{4} + \frac{25}{32} =$ ____________

ASSIGNMENT SHEET #9

I. A compound used in making artificial limbs requires mixing a base liquid and a hardener. How many gallons of the compound will be produced if you mix 1 pint of hardener with 2 quarts of base?

(NOTE: There are eight pints in a gallon. There are four quarts in a gallon.)

Gallons of compound ____________

J. A cast is put on a broken limb. What is the thickness of the cast if the impregnated plaster of Paris bandaging is $^{7}/_{16}$ inch thick and the padding is $^{21}/_{32}$ inch thick?

Thickness ____________

BASIC MATHEMATICS
UNIT I

ASSIGNMENT SHEET #10 — SUBTRACT FRACTIONS

NAME ______________________ SCORE ____________

To subtract common fractions, change to equivalent fractions with common denominators. Find the difference between the numerators of the equivalent fractions. Place the difference over the common denominator and, if necessary, reduce the answer to lowest terms.

EXAMPLE: $\frac{2}{3} - \frac{1}{4}$ becomes $\frac{8}{12} - \frac{3}{12} = \frac{5}{12}$

Subtract each of the common fractions given below. Reduce to lowest terms. Refer to Information Sheet, Section XIII if necessary.

A. $\frac{3}{4} - \frac{3}{16} =$ __________

B. $\frac{7}{8} - \frac{1}{4} =$ __________

C. $\frac{30}{32} - \frac{3}{4} =$ __________

D. $\frac{25}{32} - \frac{5}{8} =$ __________

E. $\frac{7}{8} - \frac{2}{16} =$ __________

F. $\frac{15}{16} - \frac{3}{8} =$ __________

G. $\frac{1}{2} - \frac{7}{16} =$ __________

H. $\frac{3}{4} - \frac{3}{8} =$ __________

I. $\frac{13}{16} - \frac{9}{32} =$ __________

J. $\frac{7}{8} - \frac{6}{16} =$ __________

ASSIGNMENT SHEET #10

K. A client at the dental office was fitted with a retainer that had an original width of $3\frac{3}{4}$ inches. The client returns with the retainer bent out of shape. The damaged retainer measures $3\frac{1}{4}$ inches wide. How much difference is there between the original width and the damaged width?

Difference in width ______________________

L. Some IV needles consist of a trocar and cannula. The trocar needs to be $\frac{1}{32}$ inch smaller than the cannula. What diameter must the trocar be if the cannula has a $\frac{1}{8}$-inch diameter?

Trocar diameter ______________________

M. What is the difference in thickness between a $\frac{1}{2}$-inch padded splint and a $\frac{5}{8}$-inch padded splint?

Difference in thickness ______________________

N. An orthotist's saw blade removes $\frac{1}{64}$ inch of metal for each cut. A length of metal $47\frac{5}{8}$ inches long is cut in two for a brace. If one piece is $24\frac{1}{2}$ inches long, how long is the other piece?

Length ______________________

O. In orthopedic surgery, many fractured femurs are set with a metal plate and screw. If a screw is $1\frac{1}{2}$ inches long, not counting the head, and the plate is $\frac{3}{4}$ inch thick, how much of the screw will extend into the bone beyond the plate?

Length of extended part of screw ______________________

BASIC MATHEMATICS
UNIT I

ASSIGNMENT SHEET #11 — MULTIPLY FRACTIONS

NAME ______________________ SCORE ____________

To multiply fractions, multiply the numerators and denominators separately. Write the product of the numerator over the product of the denominator and reduce to lowest terms.

EXAMPLE: $\frac{2}{3} \times \frac{3}{4}$ becomes $\frac{2 \times 3}{3 \times 4} = \frac{6}{12} = \frac{1}{2}$

Multiply the following fractions. Convert mixed fractions where needed and reduce answers to lowest terms. Refer to Information Sheet, Section XIV if necessary.

A. $\frac{1}{2} \times \frac{3}{4} =$ ______

E. $\frac{3}{8} \times \frac{5}{16} =$ ______

B. $1\frac{1}{2} \times 2\frac{1}{4} =$ ______

F. $\frac{1}{2} \times 6\frac{1}{2} =$ ______

C. $\frac{7}{8} \times \frac{2}{3} =$ ______

G. $1\frac{1}{3} \times 2\frac{1}{4} \times \frac{1}{2} =$ ______

D. $\frac{1}{4} \times \frac{1}{3} \times \frac{1}{2} =$ ______

H. $2\frac{3}{4} \times 6\frac{1}{8} =$ ______

ASSIGNMENT SHEET #11

I. A disinfectant requires mixing 3/4 gallon of water and 1/4 gallon of disinfectant. How much water should be used to mix only 1/3 gallon of the solution?

Amount of water ____________________

J. There are 296 gauze pads per pound. How many gauze pads are there in 1/4 pound?

Number of gauze pads ____________________

K. After serving breakfast, lunch, and supper, the dietitian has 8 2/3 gallons of liquids left in three different varieties. If half of the liquid is milk, how many gallons of milk are there?

Number of gallons of milk ____________________

L. An orthotist wants to drill a hole half way across a metal plate for a brace. The plate is 1 3/4 inches wide. Where must the hole be drilled?

Hole location ____________________ from each side of edge

BASIC MATHEMATICS
UNIT I

ASSIGNMENT SHEET #12 — DIVIDE FRACTIONS

NAME ______________________________ SCORE ______________

Except for inverting the divisor, dividing fractions follows the same process as that for multiplying fractions. To divide fractions, convert any mixed numbers to improper fractions, invert the divisor, and multiply. Convert the improper fraction to a mixed number and reduce as required.

EXAMPLE: $3\frac{7}{8} \div 1\frac{1}{2} = \frac{31}{8} \div \frac{3}{2}$

$= \frac{31}{8} \times \frac{2}{3}$

$= \frac{62}{24}$ reduced to $\frac{31}{12}$

$= 31 \div 12$

$= 2\frac{7}{12}$

Divide the following fractions. Refer to the example above and to Information Sheet, Section XV if necessary.

A. $\frac{3}{4} \div \frac{1}{2} =$ ______

B. $2\frac{1}{4} \div 1\frac{1}{2} =$ ______

C. $\frac{7}{8} \div \frac{2}{3} =$ ______

D. $2\frac{3}{4} \div \frac{3}{16} =$ ______

E. $\frac{3}{8} \div \frac{5}{16} =$ ______

F. $1\frac{1}{2} \div \frac{3}{5} =$ ______

G. $5\frac{5}{8} \div 2\frac{1}{2} =$ ______

H. $6\frac{1}{4} \div \frac{5}{32} =$ ______

ASSIGNMENT SHEET #12

I. A nursing student was practicing his bandaging technique on six different injuries. He used a whole roll of bandage that was 48 1/2 feet long. What was the average amount of bandage used for each injury?

Number of feet ____________________

J. A veterinary assistant has 15 1/2 gallons of insecticide with which to dip eight dogs. How many gallons of dip can she use on each dog?

Number of gallons ____________________

K. In the pharmacy there are 3 1/2 boxes of a medication with six bottles in each box. The pharmacist dispenses four bottles per day. How many days can the pharmacist dispense the medication from the present supply?

Number of days ____________________

L. On hand are 142 3/8 inches of electrocardiograph paper. Each electrocardiogram requires 16 1/2 inches of this paper. How many electrocardiograms can be done with this amount of paper?

Number of electrocardiograms ____________________

BASIC MATHEMATICS
UNIT I

ASSIGNMENT SHEET #13 — ADD DECIMAL NUMBERS

NAME ______________________ SCORE ____________

Cents are only decimal parts of a dollar; and every time you total the cost of several purchases, you are adding decimals.

You can add decimals just as you add whole numbers. You must be careful, though, to keep all decimal points aligned.

Add each column of numbers, carrying when necessary. Place a decimal point in the answer directly under the decimal points above. Refer to Information Sheet, Section XVII if necessary.

EXAMPLES:

$$\begin{array}{r} 0.26 \\ +\ 0.168 \\ \hline 0.428 \end{array} \qquad \begin{array}{r} \$4.60 \\ +\ \ .40 \\ \hline \$5.00 \end{array}$$

A. $\begin{array}{r} 0.024 \\ +\ 0.165 \\ \hline \end{array}$

B. $\begin{array}{r} 0.873 \\ +\ 0.199 \\ \hline \end{array}$

C. $\begin{array}{r} \$4.60 \\ +\ \ 4.62 \\ \hline \end{array}$

D. $\begin{array}{r} 0.0003 \\ +\ 0.0099 \\ \hline \end{array}$

E. $\begin{array}{r} \$62.14 \\ +\ \ 8.87 \\ \hline \end{array}$

F. $\begin{array}{r} \$34.87 \\ +\ 96.45 \\ \hline \end{array}$

G. $\begin{array}{r} 195.7 \\ 83. \\ +\ \ 9.006 \\ \hline \end{array}$

H. $\begin{array}{r} 0.0131 \\ 0.1640 \\ +\ 0.2229 \\ \hline \end{array}$

I. $\begin{array}{r} 4.612 \\ 0.958 \\ +\ 0.885 \\ \hline \end{array}$

J. $\begin{array}{r} 4937.23 \\ 4980.47 \\ 10234.97 \\ +\ \ 9872.21 \\ \hline \end{array}$

K. $\begin{array}{r} 15.125 \\ 4.625 \\ 20.125 \\ +\ 16.125 \\ \hline \end{array}$

L. $\begin{array}{r} 0.52802 \\ 0.34007 \\ 0.00321 \\ +\ 0.00009 \\ \hline \end{array}$

ASSIGNMENT SHEET #13

M. A medical assistant bought some materials and spent $141.72 for equipment, $16.81 for syringes, and $6.27 for bandages. What was the total cost of the materials?

Total cost ____________________

N. A biomedical engineer worked four days on a certain project. He worked 6.8 hours on Monday, 7.4 hours on Tuesday, 9.3 hours on Wednesday, and 4.4 hours on Thursday. How many total hours did he work on the project?

Total hours worked ____________________

O. How much was spent on equipment if an optician bought the equipment below at the prices listed?

Lens grinder	$95.88
Glass cleaner	$9.95
Eyeglass screw	39¢
Precision screwdriver	$6.49
Lens	$10

Total cost ____________________

P. For tax purposes, a veterinarian must keep track of mileage driven in the line of work. During the past quarter, he drove 386.4 miles the first month, 519 miles the second month, and 461.2 miles the third month. What was the total mileage for the quarter?

Total mileage ____________________

BASIC MATHEMATICS
UNIT I

ASSIGNMENT SHEET #14 — SUBTRACT DECIMAL NUMBERS

NAME ______________________________ SCORE ______________

Decimals are a part of our daily lives, not only in figuring money but also in calculating time, distance, area, and many other quantities. Decimals are becoming more common, especially with the increased use of metric measurements. Subtraction is one of the basic mathematical operations done with decimals.

Set up each of the following problems in column form. Subtract and check your work. Remember, when you subtract decimals, the decimal points must be aligned. Refer to Information Sheet, Section XVIII if necessary.

A. 868.87 – 516.89 = ____________________

B. 567 – 19.856 = ____________________

C. 198 – 56.987 = ____________________

D. 567.94 – 59.78 = ____________________

E. $815.23 – $65.98 = ____________________

ASSIGNMENT SHEET #14

F. $20.03 – $15.88 = ____________________

G. 694.7 – 24.3 = ____________________

H. 5,000 – 892.66 = ____________________

I. $15 – $12.53 = ____________________

J. $219.30 – $21.85 = ____________________

K. A technician keeps track of mileage driven on the job. At the beginning of the month, the vehicle odometer reads 29,268.4. At the end of the month, the odometer reads 29,872.1. How many miles were driven during the month?

Miles driven for month ____________________

L. A plastic surgeon completed a total facial restoration and computed his profit. He billed the client for $6500.00. How much profit did he make if his expenses were $4,718.96?

Profit ____________________

ASSIGNMENT SHEET #14

M. A radiologist bought film-developing materials on sale. She had estimated the cost to be $1238.62 based on the regular price. How much did she save if the cost on sale was $1,061.19?

Savings ____________________

N. The carpet needed for a new medical center is estimated at 1781 square feet. A change is made to the estimate, reducing it by 264.5 square feet. How much carpet is required with this adjustment?

Amount of carpet needed ____________________

BASIC MATHEMATICS
UNIT I

ASSIGNMENT SHEET #15 — MULTIPLY DECIMAL NUMBERS

NAME ______________________________ SCORE ______________

Multiplication with decimals is similar to multiplication with whole numbers. However, with decimals you must take care in placing the decimal point correctly. The number of decimal places in an answer must equal the total number of decimal places in the numbers that you multiplied.

EXAMPLE:

16.11	2 Decimal Places
× 2.2	1 Decimal Place
3222	
3222	
35.442	3 Decimal Places in Answer

Set up each of the following problems in column form and multiply. Locate the decimal point in the answer. Refer to Information Sheet, Section XIX if necessary.

A. 2.64 × 3.1 = ____________________

B. 120 × 0.33 = ____________________

C. 2.25 × 0.51 = ____________________

D. 35 × 8.5 = ____________________

ASSIGNMENT SHEET #15

E. 26.4 × 3.8 = ____________________

F. 7.02 × 0.92 = ____________________

G. 0.83 × 0.55 = ____________________

H. 28.2 × 0.9 = ____________________

I. 0.069 × 0.01 = ____________________

J. 7.52 × 3.01 = ____________________

ASSIGNMENT SHEET #15

K. An EMT first aid kit is placed on sale for 25 percent off. How much is the price reduced if the regular price is $1349.80?

(NOTE: Twenty-five percent is the same as the decimal 0.25.)

Price reduction ______________________

L. The average cost of a hot pack is $41.25. During the past year, the physical therapy assistant used 150 such packs. What was the total cost?

Total cost ______________________

M. A coding assistant used 38 floppy discs at a cost of $3.49 each. What was the total cost of the discs?

Total cost ______________________

N. If the average weight of water is 2.5 grams per cubic foot, what is the total weight (in grams) of the water in a 831.75 cubic foot hydrotherapy pool?

Total weight ______________________

BASIC MATHEMATICS
UNIT I

ASSIGNMENT SHEET #16 — DIVIDE DECIMAL NUMBERS

NAME ______________________________ SCORE ______________

You will usually have to shop around to find the best buys in equipment and materials. Price comparisons often become difficult because not all suppliers base their prices on the same unit. Being able to divide decimal numbers will help you determine the best buys. Division with decimal numbers is also useful in figuring quantities of materials and weighing job opportunities.

Division with decimals is like division with whole numbers. However, before you begin to divide, you must decide where the decimal point should be placed in the number.

First study the divisor. If it has a decimal, move the decimal point to the right so that you change the decimal to a whole number. Then move the decimal point the same number of places to the right in the original number (number into which you are dividing).

EXAMPLE 1: Decimal point moved one place in both numbers.

$$\underset{\curvearrowright}{.2}\,\overline{)\underset{\curvearrowright}{.4}} \qquad\qquad \begin{array}{r} 2.\\ 2.\,\overline{)4.}\\ \underline{4}\\ 0 \end{array}$$

EXAMPLE 2: Decimal point moved two places in both numbers.

$$\underset{\curvearrowright}{.14,}\,\overline{)\underset{\curvearrowright}{.14,}028} \qquad\qquad \begin{array}{r} 1.002\\ 14.\,\overline{)14.028}\\ \underline{14}\\ 0\,028\\ \underline{28}\\ 0 \end{array}$$

EXAMPLE 3: Decimal point moved one place in both numbers; note that a zero had to be added.

$$1\underset{\curvearrowright}{.3,}\,\overline{)26\underset{\curvearrowright}{.0,}} \qquad\qquad \begin{array}{r} 20.\\ 13.\,\overline{)260.}\\ \underline{26}\\ 00 \end{array}$$

EXAMPLE 4: No decimal point was moved to the right because 3 is already a whole number.

$$3\,\overline{).6} \qquad\qquad \begin{array}{r} .2\\ 3\,\overline{).6}\\ \underline{6}\\ 0 \end{array}$$

ASSIGNMENT SHEET #16

Divide numbers in the following problems. Show your work. Refer to Information Sheet, Section XX if necessary, and check your answers.

A. 4.5 ÷ 0.5 = ____________________

B. 4.96 ÷ 0.4 = ____________________

C. 19.8 ÷ 0.6 = ____________________

D. 10.71 ÷ 0.07 = ____________________

E. 0.225 ÷ 0.15 = ____________________

F. 1.7608 ÷ 0.0062 = ____________________

G. 0.48 ÷ 0.6 = ____________________

H. 0.125 ÷ 0.25 = ____________________

ASSIGNMENT SHEET #16

I. 0.9 ÷ 0.003 = ______________________

J. 1.16 ÷ 2.9 = ______________________

K. 75 ÷ 0.03 = ______________________

L. 108 ÷ 0.09 = ______________________

M. 84 ÷ 0.007 = ______________________

N. 459 ÷ 2.7 = ______________________

O. 406 ÷ 0.029 = ______________________

P. What is the approximate cost per set of surgical greens if the cost of twelve sets is $103.68?

Approximate cost per set ______________________

ASSIGNMENT SHEET #16

Q. How many hours did a nutritionist work if he was paid a total of $681.75 at the rate of $22.50 per hour?

Total hours ____________________

R. On Tuesday the three dental hygienists in a local practice spent 21.12 hours cleaning clients' teeth. The hygienists averaged 0.66 hour per client. How many clients had their teeth cleaned Tuesday?

Number of clients ____________________

S. A hospital spent $172.80 for 8 gallons of cleaning solution. What was the cost per gallon?

Cost per gallon ____________________

T. If a unit secretary takes 12.6 hours to audit 1680 charts, how long does it take her to audit 100 charts?

Length of time ____________________

BASIC MATHEMATICS
UNIT I

ASSIGNMENT SHEET #17 — CONVERT FRACTIONS AND PERCENTAGES

NAME ________________________________ SCORE ______________

Percentage is often useful in the allied health occupations. Percent means *per hundredths*. Five percent means *five one-hundredths* and may be written three ways: 5/100, 0.05, and 5%. All have the *same* mathematical value.

Complete the following exercises. Refer to Information Sheet, Sections XXI and XXII if necessary.

PART I

A. Express each of the following fractions as a decimal.

1. 1/8 = __________
2. 1/4 = __________
3. 1/2 = __________
4. 3/4 = __________
5. 5/8 = __________
6. 1/16 = __________
7. 3/32 = __________
8. 7/8 = __________
9. 9/16 = __________
10. 15/16 = __________

B. Express each of the following fractions as a percentage.

1. 1/4 = __________
2. 1/2 = __________
3. 7/10 = __________
4. 3/4 = __________
5. 2/2 = __________

ASSIGNMENT SHEET #17

6. $^1/_{10}$ = ____________

7. $^7/_8$ = ____________

8. $^5/_{10}$ = ____________

9. $^1/_3$ = ____________

10. $^5/_8$ = ____________

PART II

Fractions having denominators of ten, or one of the powers of ten (place values), are easily written as decimal numbers. Simply allow as many places to the right of the decimal point as there are zeros in the denominator.

EXAMPLES:	$1^5/_{10}$ = 1.5	tenths
	$1^{25}/_{100}$ = 1.25	hundredths
	$1^{125}/_{1000}$ = 1.125	thousandths

A. Match the decimal numbers on the right to their correct equivalent fractions. Write the correct letters in the blanks.

______ 1. $5^6/_{10}$	a. 7.083
______ 2. $1^2/_{100}$	b. 5.006
______ 3. $^{87}/_{1000}$	c. 78.3
______ 4. $7^{83}/_{1000}$	d. 0.087
______ 5. $5^6/_{100}$	e. 0.783
______ 6. $5^6/_{1000}$	f. 87.7
______ 7. $78^3/_{10}$	g. 5.6
______ 8. $87^7/_{10}$	h. 102.0
______ 9. 102	i. 5.06
______10. $^{783}/_{1000}$	j. 1.02

ASSIGNMENT SHEET #17

B. Write decimal equivalents for each of the following fractions.

1. $63^{9}/_{10}$ = ____________
2. $5^{93}/_{100}$ = ____________
3. $5^{93}/_{1000}$ = ____________
4. $5^{93}/_{10000}$ = ____________
5. $3^{825}/_{1000}$ = ____________
6. $38^{95}/_{100}$ = ____________
7. $38^{95}/_{1000}$ = ____________
8. $42^{3}/_{10}$ = ____________
9. $402^{3}/_{10}$ = ____________
10. $897^{97}/_{100000}$ = ____________

PART III

A. Express each of the following percentages as a fraction. Reduce to lowest terms.

1. 50% = ____________
2. 25% = ____________
3. $33^{1}/_{3}$% = ____________
4. 36% = ____________
5. 28% = ____________
6. $14^{2}/_{7}$% = ____________
7. 21% = ____________
8. 75% = ____________
9. $66^{2}/_{3}$% = ____________
10. 70% = ____________

B. Express each of the following percentages as a decimal.

1. 47% = ____________
2. 15% = ____________
3. 33.3% = ____________
4. 62% = ____________
5. 75% = ____________
6. 3% = ____________
7. 16.8% = ____________
8. 9% = ____________
9. 10% = ____________
10. 50% = ____________

BASIC MATHEMATICS
UNIT I

ASSIGNMENT SHEET #18 — SOLVE PERCENTAGE PROBLEMS

NAME ____________________ SCORE __________

In allied health you will frequently encounter percentages. Many factors that affect the industry are stated as percentages. To make the most of your career in this field, you must understand what percentages mean and how they are used.

Solve the following percentage problems. Refer to Information Sheet, Section XXIII, if necessary.

PART I

A. What does it mean to say 100 percent of the work is completed? ____________

____

B. There are usually 100 client records in the transcribing room. Fourteen of them are missing. What percentage of the records are missing? ____________

C. If 14 of the records in the above problem are missing, how many are present? ______

What percent are present? ____________

D. There are 100 syringes in a box. Twenty-five syringes are what percent of the syringes in the box? ____________

Five syringes are what percent of the syringes in the box? ____________

ASSIGNMENT SHEET #18

E. There are 100 dental extractions scheduled for the month. Ninety-four have been done. What percent of the extractions have been completed? ____________________

F. If 94 of the extractions in the above problem have been completed, how many have not been done? ____________________

What percent have not been completed? ____________________

G. If 11 percent of the employees in the hospital are absent, what percent are present?

____

H. If 6 percent of a solution is water, what percent is not water? ____________________

I. Ross Scott bought a new stethoscope, which regularly sold for $120, at a sale and saved 20 percent of the regular cost. How much did he save? ____________________

J. Betty Penman's fitness center had a 20 percent increase in business this year over last year. How much was the increase if her center did $286,410.00 worth of business last year? ____________________

ASSIGNMENT SHEET #18

K. Susan has three types of screwdrivers—flat, Philips, and square. Eighty percent of her screwdrivers are flat, and 15 percent are square. What percent are Philips? ____________

L. The Smiths spent 22 percent of their income for salaries, 17 percent for rent, 15 percent for equipment, and 8 percent for supplies. What percent was left for other things? ________________________

M. Chester has finished 75 percent of the job he is doing. What percent does he still have to do?____

N. Betty has completed 40 percent of her training. What percent does she still have to do? ____

O. If you were told to complete 93 percent of the work, what percent would be left? ______

ASSIGNMENT SHEET #18

PART II

Solve each of the following percentage problems.

A. 3% of 72 is what number? __________

B. 5% of 18 is what number? __________

C. What number is 33$\frac{1}{3}$% of 96? __________

D. 40% of 125 is what number? __________

E. 68% of 63.5 is what number? __________

F. What number is 12$\frac{1}{2}$% of 140.8? __________

G. What number is 1% of 103? __________

H. What number is 37$\frac{1}{2}$% of 152? __________

I. 50% of 32.8 is what number? __________

J. 7% of 163 is what number? __________

ASSIGNMENT SHEET #18

PART III

Solve the following percentage word problems. Show your work.

A. There are 20 nursing assistants in the nursing home. Sixty percent of the nursing assistants are over twenty-two years old. How many nursing assistants are over twenty-two years old? ______________________________

B. One day 5 percent of the 20 allied health students made a perfect grade on the unit test. How many students made a perfect grade? ______________________________

C. Alex Dunn bought new uniforms—regularly selling for $120—at a sale and saved 12 percent. How much money did he save? ______________________________

D. The number of students at the state HOSA conference this year was 75 percent of what it was last year. Last year 800 students attended the conference. How many students were at the conference this year? ______________________________

BASIC MATHEMATICS
UNIT I

ASSIGNMENT SHEET #19 — SOLVE BASIC RATIO AND PROPORTION PROBLEMS

NAME ________________________________ SCORE ____________

The health care industry uses ratios and proportions in mixing various solutions. The health care worker may be required to calculate some ratios and proportions, and may be required to apply others.

Solve the following ratio and proportion problems. Refer to Information Sheet, Section XXIV if necessary. Show your work.

A. Convert the ratio 0.25:0.25:1 to the smallest proportion possible containing whole numbers.

Proportion = ____________________

B. What would be the proportion if a 1:2:12 mix were cut in half?

Proportion = ____________________

C. What would be the proportion if the ratio 1:1:3 were tripled?

Proportion = ____________________

D. You are asked to mix a solution using a 1:1:6 ratio, but you will need six times this amount. What will be the proportion of material needed?

Proportion = ____________________

E. A mixture of 1 part dextrose, 1 part alcohol, and 18 parts sodium chloride is needed to make 40 units of IV solution. How many units of each are needed?

Units of dextrose = ____________________

Units of alcohol = ____________________

Units of sodium chloride = ____________________

BASIC MATHEMATICS

ASSIGNMENT SHEET #20 — READ MEASUREMENTS ON A RULE
UNIT I

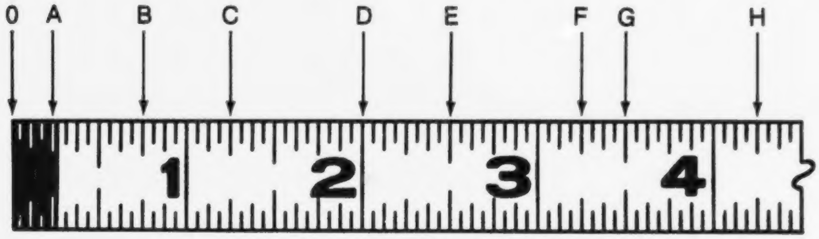
NAME ______________________________ SCORE ______________

Reading a rule or tape measure accurately is an essential skill in many health occupations. For example, a health care worker in the nursery must be able to measure an infant's length, head circumference, and chest circumference. A physical therapy assistant must be able to measure a client for crutches.

The first step in being able to make accurate measurements is to become familiar with the graduations on rules and how to read them. This assignment sheet will allow you to practice reading measurements on a rule.

PART I

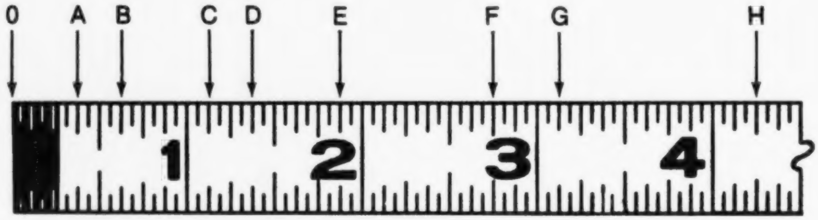
A. Read the rule illustrated below to the nearest one-quarter of an inch. Reduce your answers and write them on the lines provided.



1. 0 to A = ______________
2. A to B = ______________
3. 0 to C = ______________
4. A to D = ______________
5. B to D = ______________
6. 0 to E = ______________
7. C to E = ______________
8. B to F = ______________
9. D to G = ______________
10. A to H = ______________

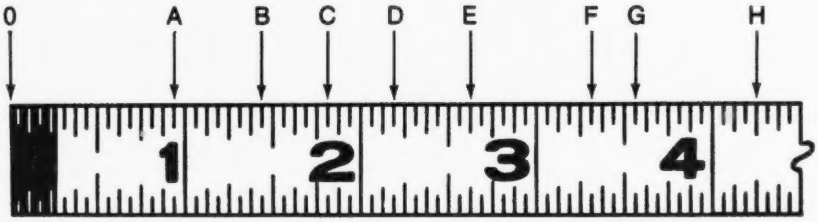
ASSIGNMENT SHEET #20

B. Read the rule illustrated below to the nearest one-eighth of an inch. Reduce your answers and write them on the lines provided.



1. 0 to A = ____________________
2. A to B = ____________________
3. 0 to C = ____________________
4. B to D = ____________________
5. A to E = ____________________
6. 0 to F = ____________________
7. D to E = ____________________
8. C to G = ____________________
9. A to H = ____________________
10. E to H = ____________________

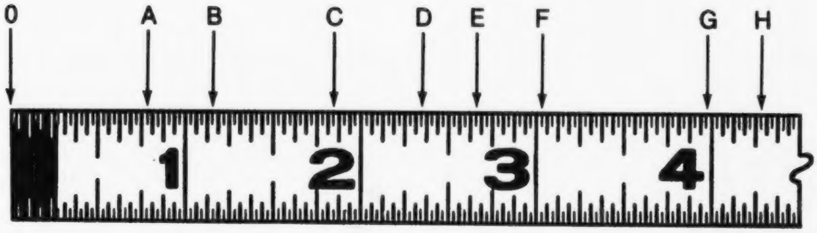
C. Read the rule illustrated below to the nearest one-sixteenth of an inch. Reduce your answers and write them on the lines provided.



1. 0 to A = ____________________
2. A to B = ____________________
3. 0 to C = ____________________
4. B to D = ____________________
5. A to E = ____________________
6. 0 to F = ____________________
7. C to F = ____________________
8. A to G = ____________________
9. 0 to H = ____________________
10. E to H = ____________________

ASSIGNMENT SHEET #20

D. Read the rule illustrated below to the nearest one thirty-second of an inch. Reduce your answers and write them on the lines provided.

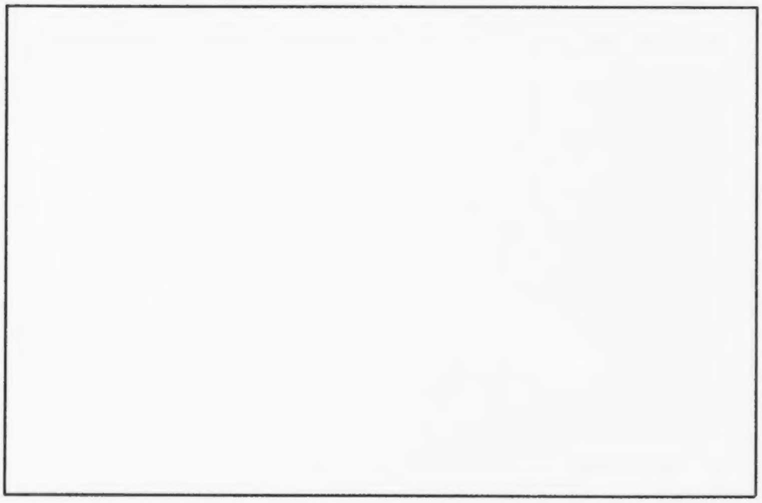


1. 0 to A = ______________________
2. 0 to B = ______________________
3. A to B = ______________________
4. 0 to C = ______________________
5. A to D = ______________________
6. B to E = ______________________
7. C to F = ______________________
8. B to G = ______________________
9. 0 to H = ______________________
10. D to H = ______________________

PART II

Measure the following objects, using a rule graduated in sixteenths of an inch.

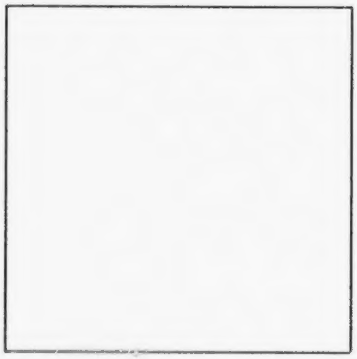
A.



1. Length = ____________
2. Width = ____________

ASSIGNMENT SHEET #20

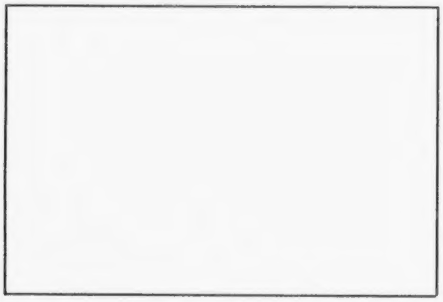
B.



1. Length = ____________

2. Width = ____________

C.



1. Length = ____________

2. Width = ____________

D. Your instructor will indicate objects and structures in your classroom or clinical site for you to measure. Measure the objects and write down the dimensions.

BASIC MATHEMATICS
UNIT 1

ASSIGNMENT SHEET #21 — CONVERT ROMAN AND ARABIC NUMERALS

NAME ______________________________ SCORE ______________

Roman numerals are frequently used in all health care areas as well as in everyday usage. The information sheet of this manual uses an outline form with Roman numerals to designate different sections. Can you think of other ways to use Roman numerals?

In this assignment sheet you will practice changing Roman numerals to Arabic numerals as well as changing Arabic numerals to Roman numerals. There are Roman symbols for numbers up to a million, but numbers over one hundred are rarely used. If you remember a few basic Roman symbols for numbers, you can read and interpret many Roman numerals.

Arabic	Roman
1	I
5	V
10	X
50	L
100	C

PART I

Convert the following Roman numerals to Arabic numerals.

A. IV = ______________

B. XXVI = ______________

C. XCIV = ______________

D. V = ______________

E. XXIX = ______________

F. CXIX = ______________

G. VI = ______________

H. XXXIV = ______________

I. IX = ______________

J. XLIX = ______________

K. VIII = ______________

L. XIV = ______________

M. LXXX = ______________

N. XXIV = ______________

O. LI = ______________

PART II

Convert the following Arabic numerals to Roman numerals.

A. 51 = ______________

B. 8 = ______________

C. 112 = ______________

D. 17 = ______________

E. 2 = ______________

F. 46 = ______________

G. 85 = ______________

H. 123 = ______________

I. 160 = ______________

J. 34 = ______________

K. 19 = ______________

L. 73 = ______________

M. 5 = ______________

N. 21 = ______________

O. 100 = ______________

OBSERVATION AND DOCUMENTATION
UNIT II

UNIT OBJECTIVE

After completing this unit, the student should be able to use health-related terminology in verbal and written observations and documentation. The student will show this ability by using a dictionary to research health-related terminology and by completing the unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match to their correct definitions terms associated with observation and documentation.
2. State purposes of documenting client information.
3. List the senses used in making observations to be documented.
4. Select from a list general guidelines for reporting and documenting subjective and objective symptoms.
5. Select from a list written resources that provide information for effective care of the client.
6. Select from a list guidelines for communicating in writing.
7. Distinguish between good and poor qualities of written documentation.
8. Match to their correct definitions common prefixes used in health-related terminology.
9. Match to their correct definitions common suffixes used in health-related terminology.
10. Define common health-related abbreviations, numbers, and symbols used in documentation of information.
11. Use a dictionary to research health-related terminology.

OBSERVATION AND DOCUMENTATION
UNIT III

INFORMATION SHEET

I. Terms associated with observation and documentation

  A. **Documentation** — Act of providing substantial support or factual statements in written form

  (NOTE: Documentation of information is important in all areas of health. Written notes concerning health care given become legal documents and may be used for a variety of legal actions.)

  B. **Objective symptom** — Symptom that is apparent or able to be seen

  EXAMPLES: Facial expressions, posture, skin color, swelling, respirations, color and amount of urine, feces, sputum, vomitus, obvious deformities

  C. **Observation** — Act of gathering data and noting facts and happenings; what is seen or noticed

  D. **Prefix** — Beginning of a word, base, or phrase

  EXAMPLES: Bi-, arthro-, anti-

  E. **Root** — Base part of a word

  F. **Subjective symptom** — Symptom that is not apparent or able to be seen by the observer and apparent only to person experiencing the symptom

  EXAMPLES: Dizziness, pain, nausea, thirst, fear, itching of skin

  G. **Suffix** — Ending of a word, base, or phrase

  EXAMPLES: -oma, -gram

  H. **Symptom** — Recognizable change in the physical or mental state

II. Purposes of documenting client information

  A. To provide information needed to plan client care and to keep care consistent

  B. To provide a legal record that can be used to protect the client, health-care agencies, and health-care providers

  (NOTE: Any written information needs to be accurate, complete, and concise. Always remember that if a written record is taken to court, whatever is written has to be defended.)

  C. To provide a way to evaluate, review, and study the client's care

INFORMATION SHEET

D. To furnish written evidence of why the client received the care given, what type of response was made, and what changes were made to meet the client's needs

(NOTE: Any health care worker who deals with filing and compiling of records should always double-check the information in the client's records.)

E. To provide information for research and education

III. Senses used in making observations to be documented

(NOTE: Observation is a critical skill for any health care worker. Observation skills are learned and improve with experience.)

A. Sight

EXAMPLES: Facial expressions; skin color and condition; client's environment; amount, character, and color of discharge or drainage

B. Hearing

EXAMPLES: Words and tone of voice of the client, body sounds heard through a stethoscope

C. Smell

EXAMPLES: Odors in environment, odors of any discharge or drainage

D. Touch

(NOTE: Touch can also comfort a client.)

EXAMPLES: Changes in skin texture or temperature, abnormalities in pulse, client's reaction to touch

E. Taste

(NOTE: Taste is usually a subjective symptom, but it can be documented by using direct quotations.)

EXAMPLES: Client may describe specific tastes related to a disease process or a medication: "Medication leaves a metallic taste in my mouth" or "Food does not taste good."

IV. Guidelines for reporting and documenting observations

A. Give exact time, date, and year that observation took place

B. State accurate location of observation

EXAMPLES: Client has a dark-red, raised area on lower left anterior thigh.

Observed client using crutches to ambulate in the physical therapy treatment room.

INFORMATION SHEET

C. Give the duration of the symptom or activity

EXAMPLES: Complained of "severe toothache that began four hours ago"

Cramping in left leg lasted about forty-five minutes.

D. Describe amount, color, and character of urine, feces, discharge, sputum, or drainage

EXAMPLES: Wound bandage is saturated with green, foul-smelling discharge.

E. State the frequency and intensity of symptoms or activities

EXAMPLE: Gums bleed after eating.

F. Describe the effect of any treatment

EXAMPLES: Breathing much easier after inhalation treatment

Animal can now walk with a limp after application of splint on left foreleg.

G. Describe any changes in client's appearance

EXAMPLES: Rash now covers entire body.

Becomes cyanotic during ambulation

H. Use client's exact words whenever possible

EXAMPLE: States, "I don't like taking that new medicine for my high blood pressure; it makes me dizzy."

I. Write or print clearly all information to be documented

J. Use facility guidelines when documenting information

K. Speak clearly, using correct health-related terminology when communicating with other health care workers

V. Written resources that provide information for effective care of the client

A. Client's chart or record

B. Kardex

C. Care plan

D. Policy and procedure manual

E. Computer data bank

INFORMATION SHEET

VI. Guidelines for communicating in writing

A. Write legibly

(NOTE: Everyone must be able to understand what you have written. It may be a life-or-death situation if something you have written has been misunderstood. It is also wise to remember that you may be called into court to verify your written communication.)

B. Spell correctly

C. Use correct medical terminology

D. Use a method for correcting errors that is accepted by your particular facility

VII. Qualities of good and poor written documentation

GOOD	POOR
A. Is clear, concise (NOTE: Be as brief as possible without sacrificing facts.)	A. Contains unnecessary words
B. Contains essential facts	B. Indicates bias against client and/or client's family EXAMPLE: Client is too dumb to learn diet.
C. Is easily understood	C. Contains professional jargon or slang EXAMPLE: sm amt lq fdg
D. Clearly indicates when stating a personal opinion EXAMPLE: In my opinion, client was not motivated to stay within diet restrictions.	D. Is critical of client's treatment by other professionals EXAMPLE: The patient would tolerate the tube feeding if the nurses would administer it correctly.
E. Is signed with name, title of person writing it, and date EXAMPLE: Ann Jefferson, NA 9-10-8__	E. Is not signed or dated

INFORMATION SHEET

VIII. Common prefixes used in health-related terminology (Table 1)

TABLE 1

Prefix	Meaning	Examples
A-, an-	Without, lack of	Anuria, apnea
Ab-	Away from	Abduct, abducent
Ad-	Toward	Adduct, adductor
Adeno-	Gland	Adenoid, adenoma
Amnio-	Sac	Amnion, amniocentesis
Angi-, angio-	Vessel	Angiogram, angiocatheter
Ante-	Before	Antepyretic, ante partum
Anti-	Against	Anticonvulsant, antibody
Antr-	Chamber	Antronasal, antrectomy
Apo-	Detached	Apolar, apodia
Arthro-	Joint	Arthritis, arthrocentesis
Athero-	Yellowish fatty plaque	Atheroma, atherosclerosis
Aur-, auri-	Ear	Aural, auriscope
Auto-	Self	Autism, autoclave
Axilla-	Armpit	Axillary
Bi-	Two	Biceps, biparous
Bio-	Life	Biology, biologist
Blast-	Developing cell	Blastoma, blastocyst
Brady-	Slow	Bradycardia, bradypnea
Cap-	Head	Caput

INFORMATION SHEET

TABLE 1 (Continued)

Prefix	Meaning	Examples
Carcin-	Cancer	Carcinogen, carcinoma
Cardio-	Heart	Cardiologist, electrocardiogram
Cebr-, cerebro-	Cerebrum, cerebral, brain	Cerebral palsy, cerebrovascular
Cervico-	Neck	Cervicitis, cervical
Chol-, chole-, cholo-	Bile, gall	Cholecyst, cholera
Colo-	Colon	Colonoscope, colitis
Contra-	Against	Contraception, contraindication
Corono-	Heart	Coronary
Cranio-	Cranium (skull)	Craniotomy, craniopuncture
Cyan-	Blue	Cyanosis, acrocyanosis
Cyst-, cysti-, cysto-	Sac	Cystiform, cholecyst
Cyto-	Cell	Cytogenesis, cytocide
Derm-, dermat-, dermato-	Skin	Dermabrasion, dermatitis
Diplo-	Two, double	Diplococcus, diplopia
Dys-	Painful	Dysuria, dysmenorrhea
Encephalo-	Brain	Encephalitis, encephalogram
Endo-	Inside	Endocarditis, endocolitis
Epi-	Upon or after	Epigastrium, epithelial

INFORMATION SHEET

TABLE 1 (Continued)

Prefix	Meaning	Examples
Erythro-	Red	Erythrocyte, erythroblastoma
Exo-	Outside	Exocolitis, exocardia
Gastro-	Stomach	Gastritis, gastrectomy
Hem-, hema-, hemato-, hemo-	Blood	Hematoma, hemorrhage
Hepato-	Liver	Hepatitis, hepatomegaly
Histo-	Tissue	Histology, histoplasmosis
Hydro-	Water	Hydrocele, hydrocephalus
Hyper-	Excessive, above	Hypertension, hyperthyroidism
Hypo-	Under, below	Hypothermia, hypocalcemia
Inter-	Between	Interstitial, interdigital
Intra-	Inside	Intracellular, intracranial
Leuko-	White	Leukoplakia, leukocyte
Lipo-	Fat	Lipoid, lipoma
Litho-	Stone, calculus	Lithoscope, lithotripsy
Mal-	Abnormal	Malformed, malabsorption
Masto-, mammo-	Breast	Mastitis, mammogram
Melano-	Black	Melanoma, melanocyte

INFORMATION SHEET

TABLE 1 (Continued)

Prefix	Meaning	Examples
Myo-	Muscle	Myography, myogenous
Neo-	New	Neoplasm, neonatal
Nephro-	Kidney	Nephritis, nephrolithiasis
Neuro-	Nerve	Neuralgia, neuritis
Oligo-	Scanty, few	Oligohydramnios, oliguria
Oophoro-	Ovary	Oophoritis, oophorectomy
Op-, ophth-, optic-	Eye, vision	Ophthalmitis, ophthalmology
Orchi-	Testicle	Orchitis, orchiotomy
Orth-	Straight	Orthotist, orthodontist
Osteo-	Bone	Osteoarthritis, osteoma
Oto-	Ear	Otitis, otodynia
Pedi-	Child	Pediatrics, pediatrician
Peri-	Around, surround	Peribronchial, periarthritis
Phleb-, phlebo-	Vein	Phlebitis, phlebotomy
Physio-	Nature	Physiology
Pleuro-	Membranes of lungs	Pleurisy, pleuropneumonia
Pneumo-	Air, lungs	Pneumonectomy, pneumoangiograph
Poly-	Many, too much	Polyuria, polyhydramnios
Procto-	Rectum	Protoscope, proctorrhea

INFORMATION SHEET

TABLE 1 (Continued)

Prefix	Meaning	Examples
Pseudo-	False	Pseudoparalysis, pseudoedema
Psych-	Mind	Psychology, psychiatry
Pyelo-	Pelvis	Pyelitis, pyelonephritis
Recto-	Rectum	Rectocolitis, rectalgia
Rhino-	Nose	Rhinorrhea, rhinotomy
Splen-, spleno-	Spleen	Splenomegaly, splenoma
Tracheo-	Trachea	Tracheostomy, tracheitis

IX. Common suffixes used in health-related terminology (Table 2)

TABLE 2

Suffix	Meaning	Example
-algia	Pain	Myalgia
-centesis	Puncture of a cavity	Paracentesis
-ectomy	Removal of	Hysterectomy
-cyte	Cell	Leukocyte
-emia	Blood condition	Anemia
-gram	Record, x-ray film	Sonogram
-graph	Instrument used to record	Cardiograph
-ist	Specialist	Radiologist
-itis	Inflammation	Sinusitis
-megaly	Enlargement	Acromegaly

INFORMATION SHEET

TABLE 2 (Continued)

Suffix	Meaning	Example
-natal	Birth	Neonatal
-oid	Resembling	Lipoid
-ology	Study of	Pharmacology
-oma	Tumor	Sarcoma
-orrhea	Flow, excessive discharge	Diarrhea
-osis	Condition of	Osteoporosis
-ostomy	Creation of an artificial opening	Gastrostomy
-otomy	Cutting into or incision	Laparotomy
-penia	Decrease	Leukopenia
-phobia	Fear	Claustrophobia Hydrophobia
-plasty	Plastic or surgical repair	Mammoplasty
-ptosis	Drooping or sagging	Proptosis
-rrhagia	Abnormal discharge	Metrorrhagia
-rrhaphy	Suture or sew	Herniorrhaphy
-scope	Instrument used for visual examination	Bronchoscope
-scopy	Visual observation	Laparoscopy
-stasis	Control, stop	Hemostasis
-trophy	Nourishment, development	Dystrophy
-uria	Urine, urination	Hematuria

INFORMATION SHEET

X. Common health-related abbreviations, numbers, and symbols used in documentation of information (Table 3)

TABLE 3

Abbreviation	Meaning
āā	of each
abd	abdomen
ac	before meals
ad lib	as needed
a.m.	morning
amb	ambulatory, walking
amt	amount
approx	approximately
ax	axillary
bid	twice per day
BMR	basal metabolic rate
BM	bowel movement
BP	blood pressure
BRP	bathroom privileges
C	centigrade
c̄	with
CA or ca	cancer
cc (c.c.)	cubic centimeters
c/o	complains of
CVA	cerebrovascular accident
DC	discontinue
ECG (EKG)	electrocardiogram; tracing of heart function
EEG	electroencephalogram; brain wave tracing
ER	emergency room
exam	examination

INFORMATION SHEET

TABLE 3 (Continued)

Abbreviation	Meaning
F	Fahrenheit
fld	fluid
GI	gastrointestinal
GU	genitourinary
gyn	gynecology
h	hour
H_2O	water
hs	bedtime; hour of sleep
I and O	intake and output
IV	intravenous
l	liter
lab	laboratory
liq	liquid
LLQ	left lower quadrant; left lower section of abdomen
LUQ	Left upper quadrant
min	minute
noc	night
NPO	nothing by mouth; nothing per os
O_2	oxygen
OB	obstetrics
OR	operating room
P	pulse
$\bar{p}$	after
Ped, Peds, or Pedi	pediatrics
per	by or through
po	per os; by mouth
post-op	postoperative

INFORMATION SHEET

TABLE 3 (Continued)

Abbreviation	Meaning
prn	when necessary
pre-op	pre-operative
pt	patient
PT	physical therapist or therapy
$\bar{q}$	every
qd	every day
qh	every hour
qid	four times per day
qod	every other day
R or resp	respirations
RBC	red blood cell
RLQ	right lower quadrant of abdomen
RUQ	right upper quadrant of abdomen
$\bar{s}$	without
stat	at once
surg	surgical
temp	temperature
tid	three times per day
TLC	tender, loving care
TPR	temperature, pulse, respiration
via	by way of
WBC	white blood cell
wt	weight
et, +, &	and

OBSERVATION AND DOCUMENTATION
UNIT II

ASSIGNMENT SHEET #1 — DIVIDE AND DEFINE HEALTH-RELATED TERMS

NAME ______________________________ SCORE ______________

Breaking up health-related terms makes them easier to understand, spell, and write. If you know the meanings of the prefixes and suffixes, you will be able to define the entire term. Using the list below, write the word parts, the meanings of the parts, and then the definition of the entire term.

Word	Word Parts	Meaning	Definition
EXAMPLE:			
Ophthalmoscope	Ophthalm(o)-	eye	A lighted viewing tool made to examine the eye
	-scope	lighted viewing tool	
A. Histology			
B. Leukemia			
C. Dermatologist			
D. Hepatitis			
E. Tracheotomy			
F. Colostomy			
G. Intradermal			
H. Mammoplasty			

ASSIGNMENT SHEET #1

Word	Word Parts	Meaning	Definition
I. Anuria			
J. Neurology			
K. Hypodermic			
L. Lipoma			
M. Hemostasis			

OBSERVATION AND DOCUMENTATION
UNIT II

ASSIGNMENT SHEET #2 — USE A DICTIONARY TO RESEARCH HEALTH-RELATED-TERMINOLOGY

NAME ______________________ SCORE __________

You will always need to keep a health-related dictionary handy for quick reference. Knowing how to use the dictionary will help you pronounce, spell, and learn the meanings of health-related terms. Look up each of the words below, break each into word parts, and give the definition for each word.

Word	Word Parts	Definition
A. Myelitis		
B. Oliguresis		
C. Fibromatosis		
D. Gastrectomy		
E. Hydroma		
F. Spermatoblast		
G. Psychocatharsis		
H. Cardiostenosis		
I. Cytophagocytosis		

ASSIGNMENT SHEET #2

Word	Word Parts	Definition
J. Nephroma		
K. Salpingotomy		
L. Osteosis		
M. Hydrocephalus		
N. Laryngopharyngitis		
O. Pericarditis		
P. Cholecystectomy		
Q. Nephrolithiasis		
R. Supralumbar		
S. Pathologist		
T. Diplopia		
U. Intercellular		

ASSIGNMENT SHEET #2

Word	Word Parts	Definition
V. Pneumoencephalography		
W. Glycosuria		
X. Histocyte		

BASIC PHYSICAL AND LIFE SCIENCES
UNIT III

UNIT OBJECTIVE

After completing this unit, the student should be able to apply principles of basic physical and life sciences, and distinguish between properties of acids and bases. The student will show this knowledge by completing the assignment sheet and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match terms associated with basic concepts of physical sciences to their correct definitions.
2. Distinguish between states of matter.
3. Write the chemical symbols for common elements and compounds.
4. Distinguish between physical and chemical changes.
5. List forms of energy.
6. Distinguish between properties of acids and bases.
7. Select from a list common properties of acids and bases.
8. Select from a list functions of mineral salts in the human body.
9. Match terms associated with basic concepts of life sciences to their correct definitions.
10. Label basic parts of a cell.
11. Match basic cell components to their correct descriptions.
12. Distinguish among different types of tissue.
13. Identify the abdominopelvic regions of the body on a given diagram.
14. Label the body cavities on a diagram of the body.
15. Identify directional terms on diagrams of bodies.
16. Classify the pH of solutions.

BASIC PHYSICAL AND LIFE SCIENCES
UNIT III

INFORMATION SHEET

I. Terms and definitions associated with basic concepts of physical science

(NOTE: Physical science deals with forces and general properties of matter and energy.)

A. **Acid** — Substance that yields hydrogen ions in solution

B. **Acidosis** — Condition resulting from accumulation of acid or depletion of the alkaline reserve in the blood and body tissues

C. **Alkalosis** — Condition resulting from accumulation of base or depletion of acid reserve in the blood and body tissues

D. **Base** — Substance that yields hydroxyl ions in solution

E. **Chemical change** — Change that affects the composition of matter

F. **Chemistry** — Science that deals with the composition of substances and the changes they undergo

G. **Compound** — Two or more elements united in a fixed ratio

H. **Electrolyte** — Any compound that separates into charged particles, called ions, which are capable of conducting an electrical current when dissolved in water

I. **Element** — Simple, pure substance that cannot be decomposed by ordinary chemical reactions

J. **Energy** — Force that produces change or results from change; the ability or power to do work

K. **Ion** — Atom or group of atoms carrying an electrical charge

L. **Matter** — Physical material having form and weight; anything that occupies space and has weight

M. **Mineral salts** — Compounds formed from the reaction of an acid with a base

N. **Mixture** — Two or more elements or compounds that are not chemically combined

O. **pH** — Hydrogen ion concentration of a solution; degree to which a solution is acidic or basic

P. **Physical change** — Change that does not affect the composition of matter

Q. **Physics** — Science that deals with matter, energy, and their interactions

R. **Plasma** — Liquid part of the blood

S. **Solution** — Liquid containing dissolved solids called *solutes*

INFORMATION SHEET

II. States of matter

A. Solid — Has a definite shape, volume, and weight

EXAMPLES: Bones, tissues

B. Liquid — Has a definite volume and weight but assumes the shape of the container in which it is placed

EXAMPLES: Plasma, tissue fluid

C. Gas — Has a definite weight but indefinite shape and volume

EXAMPLE: Oxygen and carbon dioxide in the lungs

III. Chemical symbols for common elements and compounds (Tables 1 and 2)

TABLE 1

Element	Symbol
Carbon	C
Chlorine	Cl
Hydrogen	H
Iodine	I
Iron	Fe
Nitrogen	N
Oxygen	O
Phosphorus	P
Potassium	K
Sodium	Na

TABLE 2

Compound	Symbol
Carbon dioxide	CO_2
Hydrochloric acid	HCl
Hydrogen peroxide	H_2O_2
Sodium chloride	NaCl
Water	H_2O

INFORMATION SHEET

IV. Physical and chemical changes

- A. Chemical change
    - 1. Produces a new substance
    - 2. Is irreversible or reversible only with difficulty

      EXAMPLES: Rusting iron, souring milk, burning wood, digesting food
- B. Physical change
    - 1. Produces no new substance
    - 2. Is easily reversible

      EXAMPLES: Heating iron, freezing water to ice, heating water to steam

V. Forms of energy

- A. Heat
- B. Mechanical
- C. Radiant
- D. Electrical
- E. Chemical

VI. Properties of acids and bases

- A. Acids

  (NOTE: Excessive concentration of acids in body may cause acidosis.)
    - 1. Sour taste
    - 2. Pungent odor
    - 3. pH 7 or below
- B. Bases

  (NOTE: Excessive concentration of bases in the body may cause alkalosis.)
    - 1. Bitter taste
    - 2. Soapy or slippery feeling
    - 3. pH above 7

INFORMATION SHEET

VII. Common properties of acids and bases

A. React with each other to produce salts and water

(NOTE: Salts and water are essential to the maintenance of a normal acid-base balance in the body.)

B. Cause certain dyes to undergo a color change

VIII. Functions of mineral salts in the human body

(NOTE: Body fluids produce needed mineral salts, or electrolytes, that break into ionized particles to be used in various body functions. These mineral salts have either a positive or a negative charge.)

EXAMPLES:

Positive charges:	Negative charges:
Calcium Ca^+	Bicarbonate HCO_3^-
Magnesium Mg^+	Chloride Cl^-
Potassium K^+	Phosphate PO_4^-
Sodium Na^+	Sulfate SO_4^-

A. Build and maintain skeletal tissue

B. Help to maintain acid-base balance

C. Help to maintain fluid balance

IX. Terms and definitions associated with basic concepts of life sciences

(NOTE: Life sciences deal with metabolism, growth, response to stimuli, reproduction, and organization of the body.)

A. **Anatomy** — Study of structure

B. **Biology** — Study of life

C. **Catalyst** — Substance that increases the rate of a chemical reaction without being permanently altered itself

D. **Conductivity** — Ability to convey an impulse

E. **Cytology** — Study of cells

F. **Enzyme** — Organic catalyst produced by living cells

G. **Histology** — Study of microscopic structure of tissues

H. **Homeostasis** — State of chemical balance between the cell and its environment

I. **Metabolism** — Total physical and chemical processes and reactions taking place within an organism

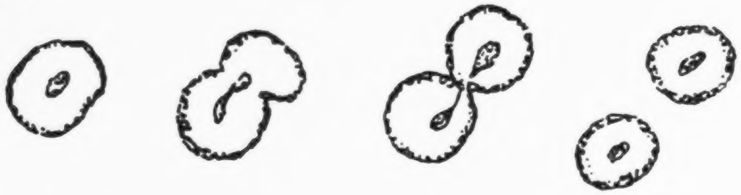
J. **Microbiology** — Study of minute living organisms

INFORMATION SHEET

K. **Mitosis** — Process by which cells divide and reproduce themselves to produce higher forms of life (Figure 1)

(NOTE: Most cells go through mitosis; but some cells such as nerve cells, sperm, and ova, do not divide and reproduce after birth.)

FIGURE 1



L. **Molecule** — Smallest unit into which a substance may be divided without losing its characteristics

(NOTE: A molecule is composed of two or more atoms that form a specific chemical compound.)

M. **Phagocytosis** — Ingestion and digestion of a particular substance, such as bacteria or dust, by a cell

N. **Physiology** — Study of function

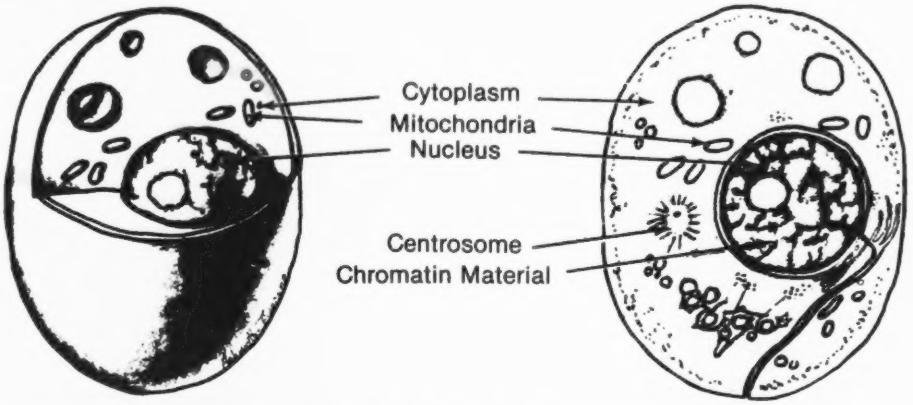
O. **Protoplasm** — Living material in all cells

P. **Visceral** — Pertaining to the internal organs

X. Basic parts of a cell (Figure 2)

(NOTE: The human body is made up of many cells. These cells group and form tissue, which in turn forms organs that, grouped together, form systems. The body is composed of 40 percent solids and 60 percent liquids.)

FIGURE 2



Used with permission of W.B. Saunders Company from *Structure and Function in Man*, 5th ed., by Stanley W. Jacob, Clarice A. Francone, and Walter J. Lossow, copyright 1982.

INFORMATION SHEET

XI. Components of a cell

A. Cell membrane — Outer wall; holds the cell together

B. Centrosome — Region near the nucleus that contains some DNA and aids in cell division

C. Chromatin granules or material — Part of the nucleus, regulates cell production and growth

D. Chromosome — Body in the nuclear material that determines heredity

E. Cytoplasm — Colorless, transparent substance containing dissolved salts and food substances

F. Mitochondria — Areas that carry on chemical reactions and produce energy

G. Nucleus — Control center containing chromatin and DNA

(NOTE: DNA is *deoxyribonucleic acid*, a protein that is considered to be the chemical basis of heredity and the carrier for genetic information.)

XII. Functions of different types of tissue

A. Epithelial

(NOTE: Epithelial tissue, which has cells that are close together, covers surface inside and outside the body.)

1. Protects skin
2. Secretes hormones
3. Absorbs vitamin D
4. Receives sensations

B. Connective

1. Connects tendons
2. Supports bones
3. Lines the skin
4. Protects bursal sacs

C. Nerve — Carries nerve impulses from a portion of the brain or spinal cord to all parts of the body

(NOTE: Body cannot renew nerve tissue.)

INFORMATION SHEET

D. Muscle

(NOTE: Muscle tissue is either *voluntary*, those you can move consciously, or *involuntary*, those you cannot move at will, such as the heart muscle.)

1. Ensures movement
2. Dilates

   (NOTE: Dilation makes an opening larger.)

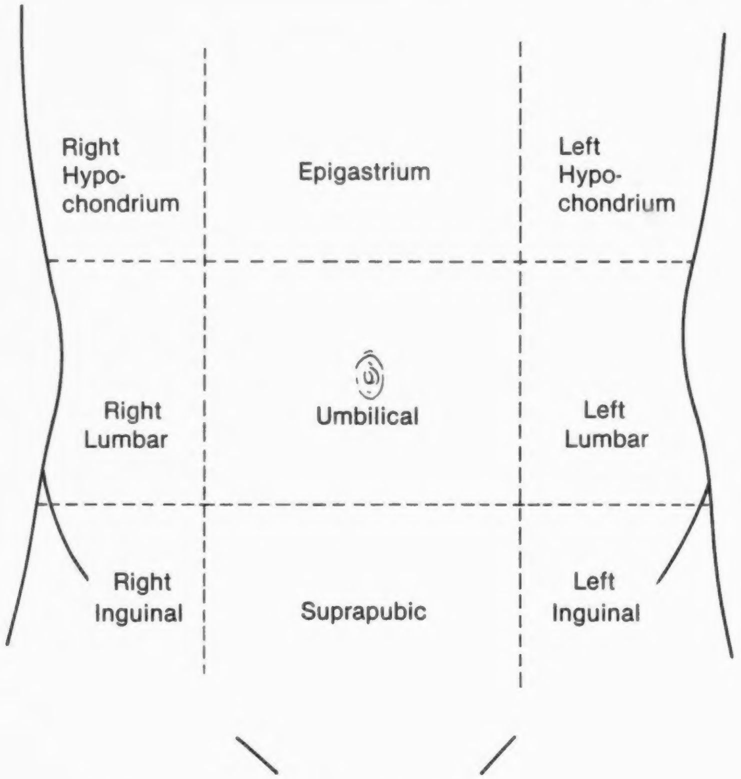
3. Contracts

   (NOTE: Contraction makes an opening, such as the pupil of the eye, smaller.)

XIII. Abdominopelvic regions of the body (Figure 3)

(NOTE: The abdominopelvic area is usually divided into quadrants. The quadrants are referred to as upper right, upper left, lower right, and lower left. More specific areas are named according to which organs or structures belong in that area of the body.)

FIGURE 3


Right Hypo-chondrium
Epigastrium
Left Hypo-chondrium
Right Lumbar
Umbilical
Left Lumbar
Right Inguinal
Suprapubic
Left Inguinal

INFORMATION SHEET

XIV. Body cavities (See Figure 4)

A. Dorsal

1. Cranial cavity
2. Spinal cavity

   (NOTE: Vertebrae protect the spinal column.)

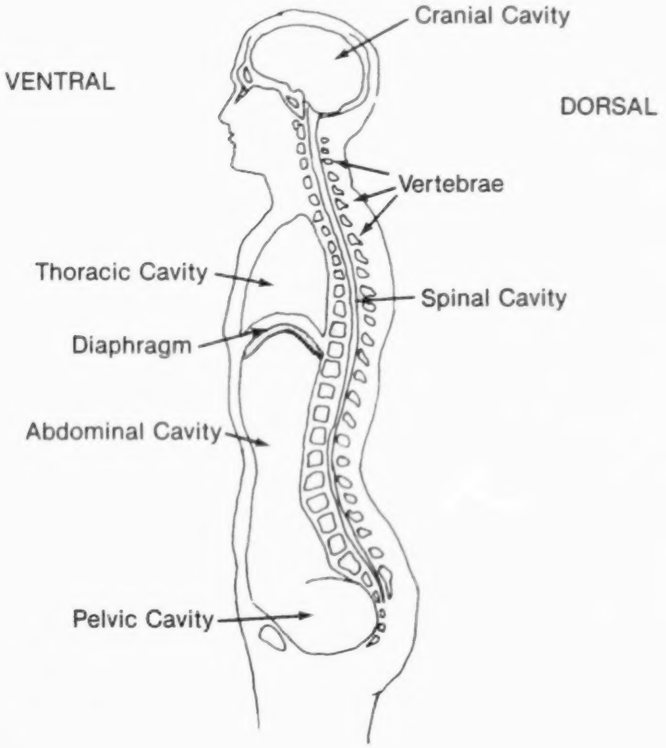
B. Ventral

1. Thoracic cavity

   (NOTE: The diaphragm, a strong muscle that assits in breathing, separates the thoracic cavity from the abdominal cavity.)

2. Abdominal cavity
3. Pelvic cavity

FIGURE 4


Cranial Cavity
VENTRAL
DORSAL
Vertebrae
Thoracic Cavity
Spinal Cavity
Diaphragm
Abdominal Cavity
Pelvic Cavity

INFORMATION SHEET

XV. Directional terms

A. Medial — Near the midline (See Figure 5)

B. Lateral — Toward the side (See Figure 5)

C. Posterior — Toward the back (See Figure 6)

D. Anterior — Toward the front (See Figure 6)

E. Superior — Above (See Figure 7)

F. Inferior — Below (See Figure 7)

FIGURE 5

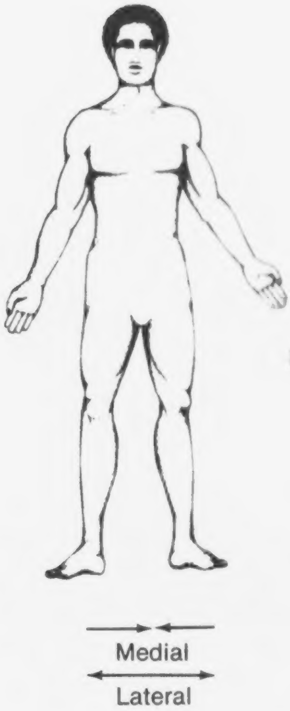

Medial
Lateral

FIGURE 6

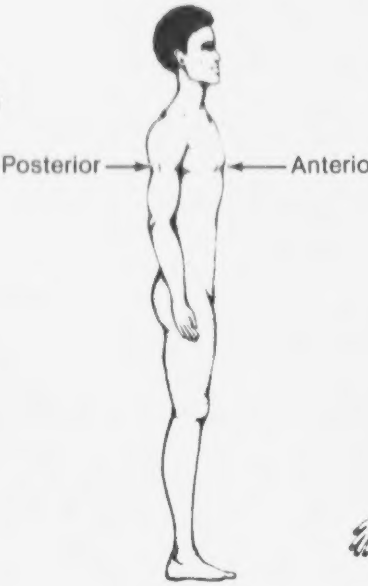
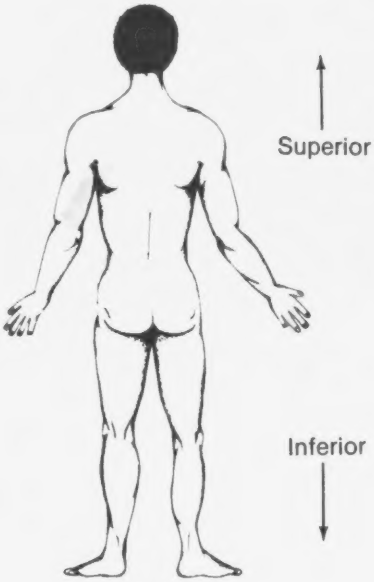

Posterior
Anterior

FIGURE 7


Superior
Inferior

INFORMATION SHEET

G. Central — Pertaining to the center (See Figure 8)

H. Peripheral — Pertaining to the outer part (See Figure 8)

I. Cranial — Near the head (See Figure 9)

J. Caudal — Near the lower end of the spine (See Figure 9)

K. Proximal — Nearest the origin of the structure (See Figure 10)

L. Distal — Farthest from the origin of the structure (See Figure 10)

FIGURE 8

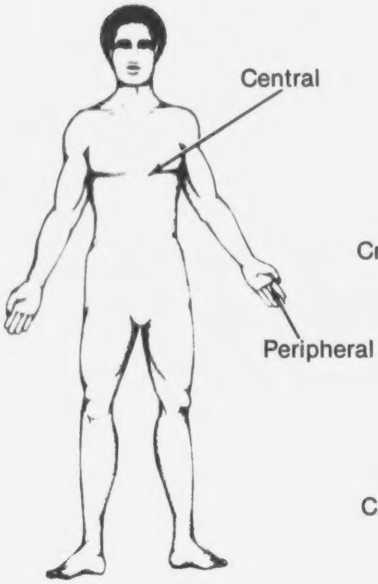

Central
Peripheral

FIGURE 9

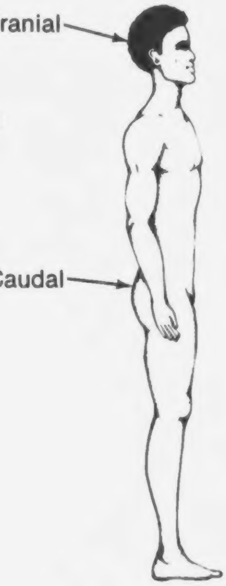
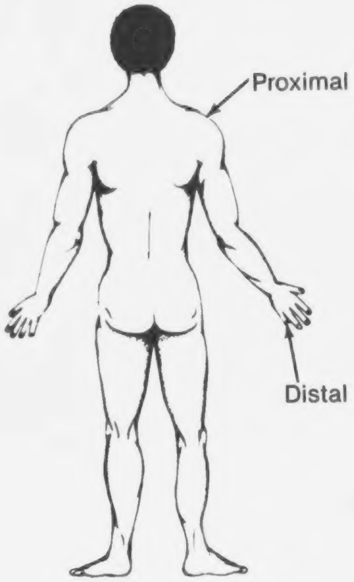

Cranial
Caudal

FIGURE 10


Proximal
Distal

BASIC PHYSICAL AND LIFE SCIENCES
UNIT III

ASSIGNMENT SHEET #1 — CLASSIFY THE pH OF SOLUTIONS

NAME ______________________________ SCORE ____________

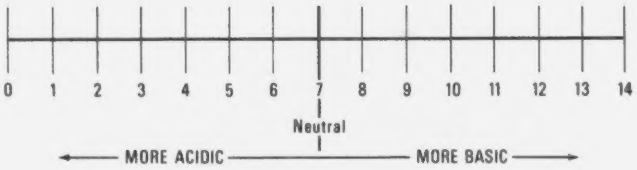
Knowledge of acidic and basic substances is very important in the health field. To remain healthy, people must maintain a good balance of acids and bases in their bodies.

Using the litmus paper and instructions given by the instructor, test different solutions to find their pH. Suggestions for solutions to use include tomato juice, vinegar, household cleanser, shampoo, baking soda, blood, and urine.

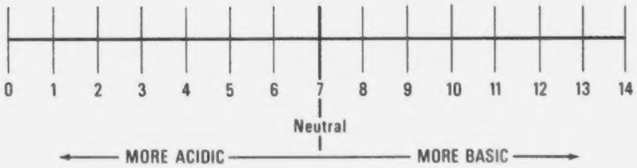
Classify the pH of solutions using the scale provided.

SOLUTION

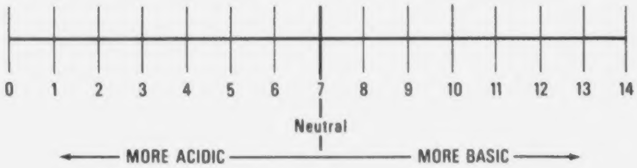
A. ____________________


0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
Neutral
MORE ACIDIC
MORE BASIC

B. ____________________


0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
Neutral
MORE ACIDIC
MORE BASIC

C. ____________________


0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
Neutral
MORE ACIDIC
MORE BASIC

BASIC MICROBIOLOGY
UNIT IV

UNIT OBJECTIVE

After completing this unit, the student should be able to identify factors that influence the growth of organisms and to list ways organisms are spread. The student should also be able to list rules for aseptic care of equipment, name methods used for disinfection and/or sterilization, and demonstrate proper handwashing technique. The student will show this ability by completing the job sheet and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match to their correct definitions terms associated with basic microbiology.
2. Name vital functions of living organisms.
3. Select from a list factors that influence growth of microorganisms.
4. Select correct types of microorganisms, given their characteristics.
5. Distinguish between types of bacteria.
6. Match to their correct definitions terms associated with asepsis.
7. List ways organisms are spread.
8. Describe types of isolation.
9. List rules for aseptic care of equipment.
10. List reasons for maintaining asepsis.
11. List methods of disinfection and/or sterilization.
12. Demonstrate the ability to use proper handwashing technique.

BASIC MICROBIOLOGY
UNIT IV

INFORMATION SHEET

I. Terms and definitions associated with basic microbiology

A. **Aerobe** — Microorganism that can live and grow only in the presence of oxygen

B. **Anaerobe** — Microorganism that can live and grow only without oxygen

C. **Chlorophyll** — Green substance in plants that manufactures carbohydrates to use for energy

D. **Helminth** — Parasitic worm

E. **Microbiology** — Study of microorganisms

F. **Microorganisms** — Tiny living plants or animals of varying shapes and sizes that cannot be seen without a microscope; microbes

G. **Molds** — Multicellular plants that grow rapidly under favorable conditions

H. **Nonpathogen** — Microorganism that usually does not cause an infection

I. **Optimum** — Condition most favorable for growth or activity

J. **Parasite** — Organism that lives within, upon, or at the expense of another living organism known as the *host*

K. **Pathogen** — Microorganism that is harmful and capable of causing disease

L. **Saprophyte** — Organism living upon dead or decaying matter

M. **Spore** — Bacterium protected by a hard shell that forms around the microorganism

(NOTE: Proper environment may cause spore to change back into an actively multiplying form of the bacterium.)

N. **Ultraviolet rays** — Radiant energy that causes tanning of the skin, production of vitamin D, and destruction of some organisms

O. **Yeasts** — Unicellular plants that reproduce by budding

II. Vital functions of living organisms

(NOTE: Each individual microorganism is able to carry out some or all of the vital functions characteristic of living organisms.)

A. Metabolism

(NOTE: *Metabolism* is the physical and chemical processes involved in the maintenance of life.)

INFORMATION SHEET

B. Growth

C. Reproduction

D. Irritability

(NOTE: *Irritability* is the ability of the organism to react to the environment.)

E. Motion

F. Protection

III. Factors that influence growth of microorganisms

A. Darkness

(NOTE: Most microorganisms are destroyed by light.)

B. Temperature

(NOTE: Optimum temperature is body temperature; most microorganisms are destroyed by heat.)

C. Moisture

(NOTE: All microorganisms require some moisture for growth.)

D. Food

(NOTE: Most of the organisms discussed in this unit contain no chlorophyll and cannot manufacture their own food from raw materials.)

E. Oxygen

(NOTE: Most microorganisms require oxygen, but some do not.)

IV. Common types of microorganisms

A. **Bacteria** — Single-celled organisms that can multiply rapidly; often called *germs*

(NOTE: Bacteria can reproduce by cell division every twenty minutes.)

B. **Fungi** — Plants that live on other plants or animals

EXAMPLES: Mushrooms, molds

C. **Protozoa** — One-celled animals capable of movement by various means

D. **Rickettsiae** — Small microorganisms found in the tissues of lice, fleas, ticks, and mites; transmitted to man through bites of insects

E. **Viruses** — Extremely small organisms that grow in living cells

INFORMATION SHEET

V. Types of bacteria

A. Nonpathogenic

(NOTE: Nonpathogenic bacteria is essential for life.)

1. Assist in decomposition of organic matter

(NOTE: Bacteria help break down the food we eat into digestible form.)

2. Aid production of some foods and chemicals

(NOTE: Bacteria in raw milk help make cheese and cultured milk products.)

B. Pathogenic — Cause disease

VI. Terms associated with asepsis

A. **Asepsis** — Absence of pathogens

B. **Autoclave** — Apparatus for sterilizing objects, using steam under pressure

C. **Carrier** — Person who has and spreads a disease-causing organism but does not show any symptoms of that disease

D. **Clean** — Contaminated, but many microorganisms have been removed

(NOTE: Medical asepsis leaves client and environment *clean*.)

E. **Contact** — Association between people or objects; exposure to pathogenic organisms

F. **Contagious** — Communicable; readily transmitted from one person to another

G. **Contaminate** — To make unsterile or unclean by direct contact with or exposure to microorganisms

H. **Cross-infection** — Infection transmitted between clients infected with different pathogens

I. **Direct contact** — Touching of two individuals or organisms

(NOTE: Many communicable diseases are transmitted by this method.)

EXAMPLES: Touching or kissing an infected person

J. **Disinfect** — To free from pathogenic organisms or to render them inert

(NOTE: Heat and steam can be classified as disinfectants, but the term *disinfect* usually means to use chemical solutions to destroy pathogens. *Sterilize* usually refers to boiling or autoclaving materials.)

INFORMATION SHEET

K. **Indirect contact** — Some means of transmitting disease other than direct contact

EXAMPLE: Breathing contaminated air or touching contaminated objects such as dishes or toiletries

L. **Infection** — Invasion of the body by microorganisms

M. **Medical asepsis** — Procedures used to protect client and environment from the transmission of pathogens from one person to another

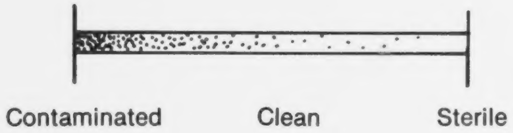
(NOTE: Medical asepsis is used in all general health care.)

N. **Sepsis** — Infection, contamination

O. **Sterile** — Free of microorganisms and spores (Figure 1)

(NOTE: Surgical asepsis leaves objects *sterile*.)

FIGURE 1



P. **Sterilize** — To destroy microorganisms by exposure to chemical or physical agents

Q. **Surgical asepsis** — Procedures used to keep objects or areas sterile or completely free of microorganisms

VII. Ways organisms are spread

A. Air

EXAMPLE: Coughing or sneezing from the infected person transmits the organisms into the air, where they can be inhaled by others.

B. Water

EXAMPLE: Infections can be transmitted to the entire community through impure drinking water.

C. Food

(NOTE: Meat inspection, proper cooking, good refrigeration, and careful handwashing help prevent food poisoning.)

INFORMATION SHEET

D. Eating and drinking utensils

EXAMPLE: Drinking from an infected person's glass can transmit disease.

E. Personal hygiene equipment

EXAMPLE: Using an infected person's toothbrush or towel can transmit disease.

F. Animals

EXAMPLES: A mosquito bite can transmit malaria or encephalitis. A bite from a rabid dog can transmit rabies to a human.

G. Fomites

(NOTE: Fomites are inanimate objects on which pathogens can be harbored.)

EXAMPLES: Doorknobs, bed linen

H. Direct contact

EXAMPLES: Touching or kissing an infected person

VIII. Types of isolation

(NOTE: Isolation limits movement and social contact of a carrier or a person with an infection or communicable disease.)

A. Isolation — Prevents spread of infection or contagious disease from client to other people

B. Reverse or protective isolation — Protects client from microorganisms of other people

EXAMPLE: A client with a large open wound or burn can easily catch an infection from other people. Reverse isolation protects the client.

IX. Aseptic care of equipment and supplies

A. Discard disposables in a safe manner

B. Clean and disinfect washable articles thoroughly after use

C. Scrub and sterilize or disinfect metal instruments after use

D. Disinfect and dry rubber articles that are not disposable

E. Use equipment carefully and safely to avoid contamination and waste

(NOTE: Unnecessary contamination may cause waste of equipment, supplies, or employee time.)

INFORMATION SHEET

X. Reasons for maintaining asepsis

(NOTE: Failure to be exacting and meticulous is not readily detectable, but it is essential that everyone perform good aseptic technique. The health care team has the responsibility of educating others about the importance of asepsis, and actions have more impact than words do.)

A. Carelessness endangers the health of health care personnel as well as that of the client

B. Prevention of disease is easier than the cure

(NOTE: The widespread and indiscriminate use of antibiotics has led to the development of many strains of bacteria that are resistant to antibiotics. Disease caused by these bacteria is certainly easier to prevent than to cure.)

C. Some pathogens can be present in the nasal cavities, throats, or on the skin of clients and health care personnel without causing any clinical symptoms

D. Pathogens can be carried from one client to another on poorly sanitized equipment such as thermometers and emesis basins

E. Some strains of microorganisms can survive for months or years in dust and bedding, especially blankets or mattresses

F. Some clients are especially susceptible to bacterial infection

EXAMPLE: People who are particularly susceptible include newborns, debilitated clients, and clients who have breaks in the skin or large lesions.

XI. Methods of disinfection and/or sterilization

A. Boiling

(NOTE: This method destroys most organisms, but not spores, in ten minutes.)

B. Autoclaving

(NOTE: Exposure to steam for fifteen minutes at 7.2 kg presssure and 150°C [18 lbs pressure and 327.6°F] kills all organisms, including spores.)

C. Dry heat

(NOTE: Hot air sterilization or gas sterilization involves the use of equipment similar to an ordinary oven.)

D. Chemical disinfection

(NOTE: The time varies with the disinfectant used.)

BASIC MICROBIOLOGY
UNIT IV

JOB SHEET #1 — USE PROPER HANDWASHING TECHNIQUE

I. Equipment

A. Soap

B. Paper towels

C. Running water

D. Hand brush, if needed

E. Orange stick, if needed

F. Waste can

II. Procedure

A. Remove any jewelry on hands or wrists

B. Roll up long sleeves

C. Turn on water

1. Turn on hand-controlled faucet

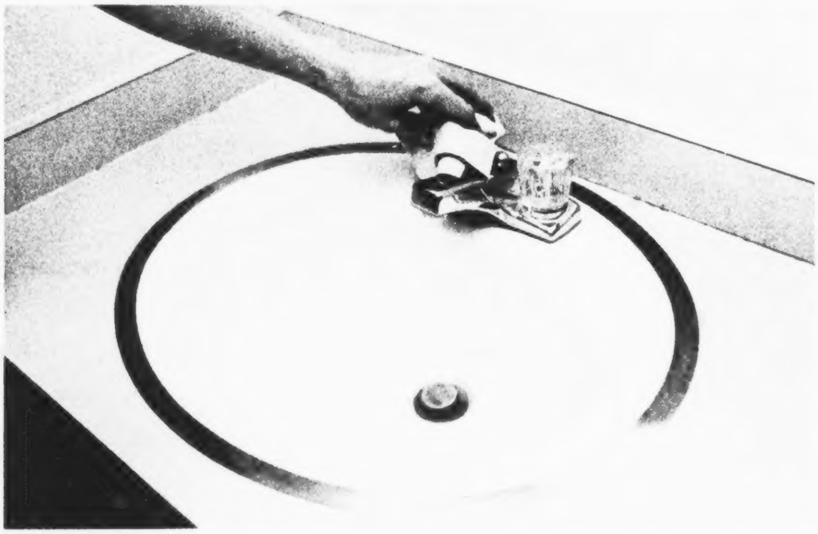
a. Hold a paper towel while turning faucet handle (See Figure 2)

(NOTE: The handle may be contaminated.)

b. Discard paper towel in waste can

c. Leave water running throughout entire procedure

FIGURE 2



JOB SHEET #1

2. Turn on foot-controlled or knee-controlled faucets as needed

D. Regulate water temperature

(NOTE: Use warm water instead of hot water; hot water may burn your hands.)

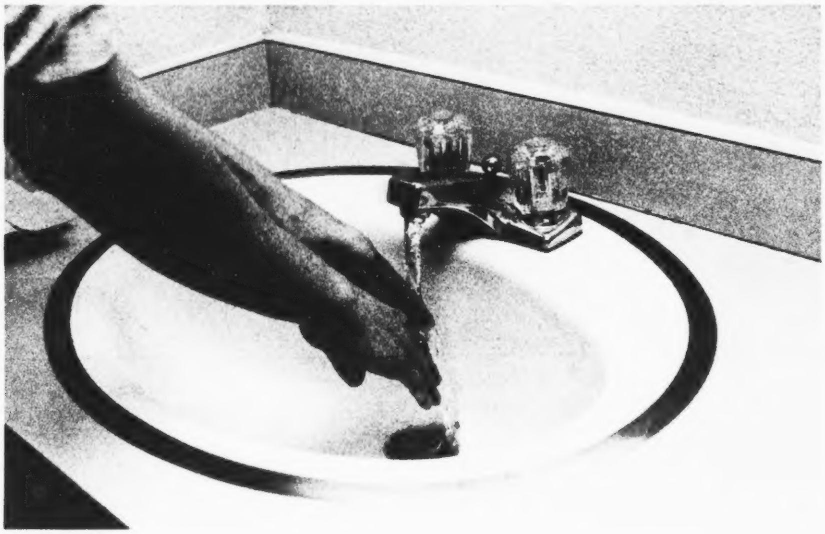
CAUTION

Do not touch any part of the sink or surrounding areas; they are contaminated.

E. Wet your hands while keeping fingertips pointing down (Figure 3)

(NOTE: Pointing fingertips down prevents water from getting on forearm and then running back down to contaminate hands.)

FIGURE 3



F. Apply soap to entire area of hands and wrists

G. Work up a lather with the soap, adding water as necessary to keep lather moist

H. Rub palms of hands together several times

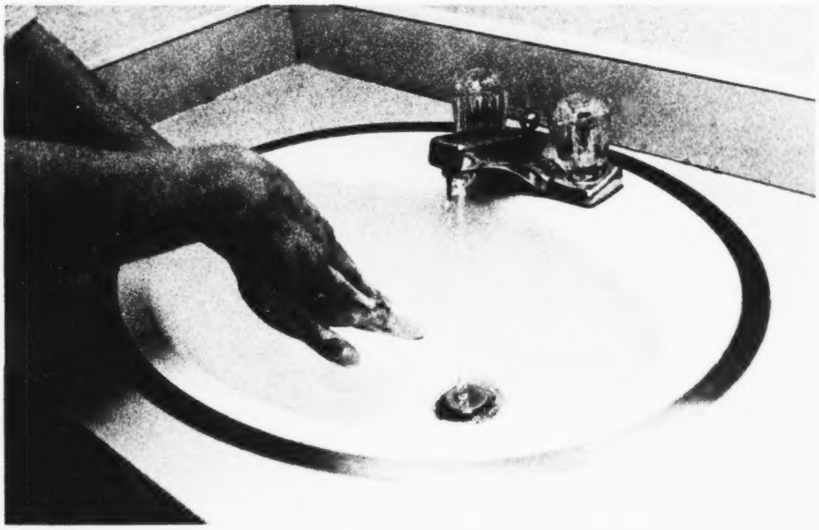
I. Clean backs of hands

1. Put palm of one hand over the back of the other; rub together several times (See Figure 4)

2. Reverse hands and repeat

JOB SHEET #1

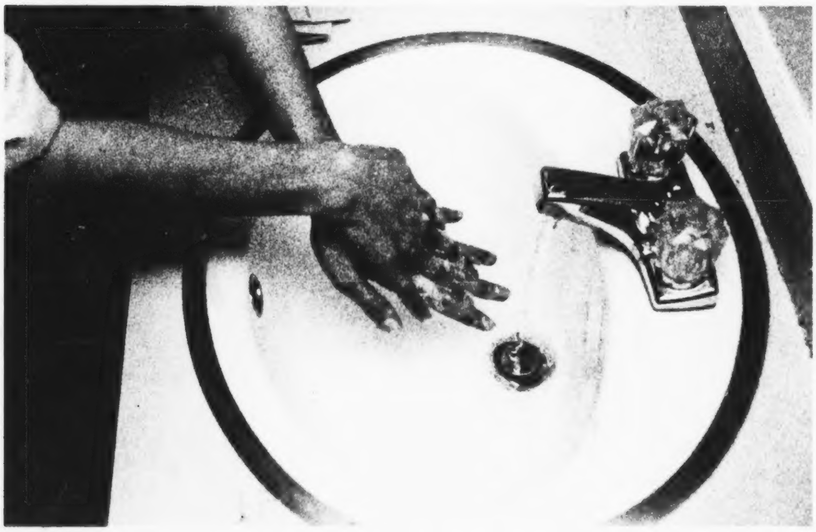
FIGURE 4



J. Clean between fingers

1. Interlace fingers on both hands; rub together several times (See Figure 5)
2. Reverse hands and repeat

FIGURE 5



JOB SHEET #1

K. Continue using friction to wash hands for 30 seconds to 2 minutes

L. Use hand brush or orange stick as needed to clean nails

(NOTE: Use the blunt end of the orange stick.)

M. Rinse hands and wrists thoroughly with water, keeping fingertips pointing down

N. Soap hands again, repeating steps F-M

O. Dry hands thoroughly

P. Turn off water, using a dry paper towel on handle of hand-controlled faucet

(NOTE: Wet towels are contaminated.)

Q. Discard towel in waste can

R. Leave area neat and clean

(NOTE: If you drop any item during the handwashing procedure, pick it up and then repeat steps K through Q.)

INTEGUMENTARY SYSTEM
UNIT I

UNIT OBJECTIVE

After completing this unit, the student should be able to discuss the structure and function of the integumentary system. The student will show this ability by completing the unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match to their correct definitions terms associated with the integumentary system.
2. Identify parts of the skin.
3. Distinguish among characteristics of layers of the skin.
4. Select correct functions for skin appendages.
5. Describe functions of the skin.
6. Select from a list characteristics of healthy skin.
7. List changes in the skin that take place during the aging process.
8. Match common skin abnormalities to their correct descriptions.
9. Describe education and duties of health occupations related to the integumentary system.

INTEGUMENTARY SYSTEM
UNIT I

INFORMATION SHEET

I. Terms and definitions

A. **Cutaneous** — Pertaining to the skin

B. **Dermatology** — Study of diseases of the skin

C. **Epithelium** — Outer layer of skin cells

D. **Exfoliation** — Scaling off of dead tissue

E. **Exudate** — Oozing fluid that moves through vessel walls into tissues

F. **Integument** — Skin or covering, including sweat and oil glands

G. **Lesion** — Circumscribed area of pathologically altered tissue

H. **Nevus** (plural, nevi) — Congenital coloration of a circumscribed area of the skin; birthmark or mole

I. **Purulent** — Forming or containing pus

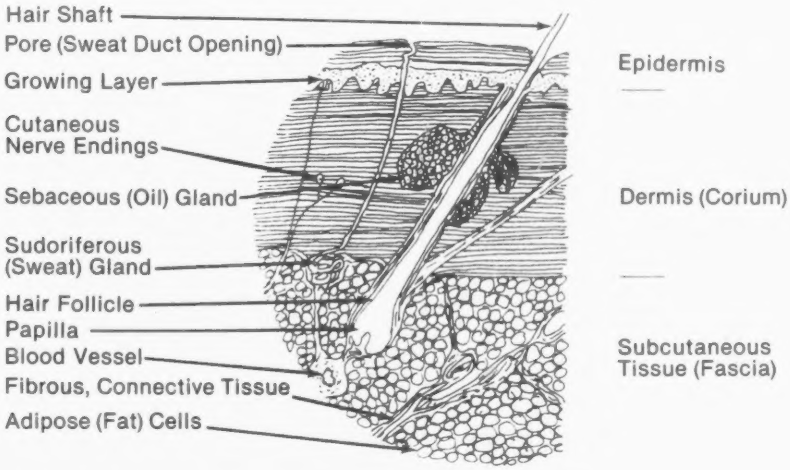
J. **Regeneration** — Repair, regrowth, or restoration of a part

K. **Squamous** — Covered with or consisting of scales

L. **Suppuration** — Process of pus formation

II. Parts of the skin (Figure 1)

FIGURE 1


Hair Shaft
Pore (Sweat Duct Opening)
Growing Layer
Cutaneous Nerve Endings
Sebaceous (Oil) Gland
Sudoriferous (Sweat) Gland
Hair Follicle
Papilla
Blood Vessel
Fibrous, Connective Tissue
Adipose (Fat) Cells
Epidermis
Dermis (Corium)
Subcutaneous Tissue (Fascia)

INFORMATION SHEET

III. Layers of the skin

A. Epidermis

1. Covers outer area of body

(NOTE: There are approximately 3,000 square inches of epidermal surface on the average adult.)

2. Consists of stratified (layered) squamous epithelial cells, and is the thickest on palms and soles

3. Forms new cells in inner layer

(NOTE: Skin can be regenerated only as long as the inner layer remains intact.)

4. Contains pigment or melanin

B. Dermis

1. Lies directly below epidermis

(NOTE: The dermis is referred to as the *true skin*.)

2. Consists of fibrous connective tissue

3. Contains blood vessels, nerves, lymph vessels, hair follicles, and sweat glands

C. Subcutaneous or superficial fascia

1. Attaches dermis to underlying structures

2. Consists of elastic and fibrous tissues and deposits of fat

IV. Appendages of the skin and their functions

(NOTE: An appendage is anything attached to a larger or major part.)

A. **Ceruminous glands** — Secrete wax; located in ears

B. **Hairs** — Keep body warm and protect against invasion of foreign matter such as dust

C. **Nails** — Horny, cutaneous plates that protect delicate tissues

D. **Sebaceous glands** — Secrete oil to lubricate and soften tissue

E. **Sudoriferous or sweat glands** — Secrete body salts, waste products, and water

INFORMATION SHEET

V. Functions of the skin

  A. Sensation — Acts as a warning system by receiving and transferring to the brain such sensations as pain, temperature, and pressure

  B. Protection

    1. Forms an elastic covering that protects against external environment
    2. Prevents excessive loss of fluids and electrolytes
    3. Prevents invasion of microorganisms
    4. Repels water

  C. Regulation of body temperature

    1. Fatty tissue acts as insulation to prevent heat loss
    2. Cools the skin through the evaporation of perspiration
    3. Can increase or decrease heat loss through adjustment of blood vessel size

  D. Excretion of substances

    1. Excretes water through the pores
    2. Releases salt
    3. Eliminates waste products through integumentary system

  E. Formation of vitamins — Forms vitamin D when exposed to sun or ultraviolet light

  F. Maintenance of skin surface

    1. Secretes oil to maintain elasticity
    2. Provides a water-resistant base

VI. Characteristics of healthy skin

  A. Smooth texture

  B. Good elasticity

  C. Consistency of color

  (NOTE: Consistent color may be difficult to assess because each individual has a certain amount of pigment in his or her skin. Also, different races have unique characteristics of color.)

INFORMATION SHEET

D. No abnormal odor

E. Hydrated quality with no dryness or flakiness

VII. Changes in the skin that take place during the aging process

A. Becomes drier

B. Is prone to wrinkling

C. May become thin and translucent

D. Is less elastic

E. Is very susceptible to irritations and bruises easily

F. Forms liver spots in areas frequently exposed to sun

VIII. Common abnormalities of the skin

A. **Cellulitis** — Inflammation of cellular or connective tissues

B. **Cyanosis** — Bluish-gray color that is best assessed in the skin around the lips, cheeks, and ear lobes

(NOTE: The distribution of cyanosis is important in determining whether or not it is indicative of a disease or disorder.)

C. **Decubitus ulcer** — Lesion, usually over bony prominence, caused by local interference of circulation

D. **Ecchymoses** (bruises) — Hemorrhagic areas under skin that may appear in small areas (petechiae) or in larger areas

(NOTE: The age of the ecchymosis may be seen by the color change. The reddish-blue area will change to greenish-brown, and then to yellow as it heals.)

E. **Edema** — Swelling caused by retention of fluid in tissues

F. **Erythema** — Redness of the skin

G. **Excoriation** — Skin abrasion caused by trauma, scraping, or scratching

H. **Jaundice** — Yellowish pigment found in the skin and sclera (white portion of the eye)

I. **Keloid** — Overgrowth of scar tissue on the skin

INFORMATION SHEET

J. **Macule** — Small flat blemish or discoloration that is flush with the skin surface

K. **Mottling** — Condition of spotting with patches of color

L. **Pallor** — Paleness of skin, best assessed in nail beds, lips, and conjuctiva (lining of eyelids)

(NOTE: When paleness is simply a person's natural coloring, the nail beds and mucous membranes should look pink.)

M. **Petechiae** — Tiny purple or red spots that appear on the skin as a result of minute capillary hemorrhage within the dermal or subcutaneous layers

N. **Tinea** — Infectious fungal skin eruption characterized by the formation of vesicles with cracking and scaling

(NOTE: The type of infection is indicated by following *tinea* with the word for the affected area of the body [*tinea barbae, tinea capitis, tinea corporis, tinea pedis*]. Tinea is also commonly known as *ringworm*.)

O. **Urticaria** — Wheals or welts that itch intensely and usually have white elevated centers; hives

IX. Health occupations related to the integumentary system (Table 1)

TABLE 1

Occupation	Education	Duties
Dermatologist	Premedical degree plus a four-year medical degree program, followed by a one-year internship and a three-year residency in dermatology	Diagnoses and treats diseases and disorders of the skin
Plastic or reconstructive surgeon	Premedical degree plus a four-year medical degree program, followed by a four-year residency in general surgery and two-year residency in plastic surgery	Makes cosmetic improvements and provides reconstruction of tissue damaged through disease, congenital disorders, or trauma
Electrologist	Bachelor's degree in any area, but with a background of chemistry, anatomy, physiology, and microbiology; plus six months of internship with practicing electrologist or minimum of 120 hours of study; must pass a two-part written and practical state board exam before registration	Removes unwanted body hair for cosmetic purposes, using a type of equipment that destroys the hair follicle

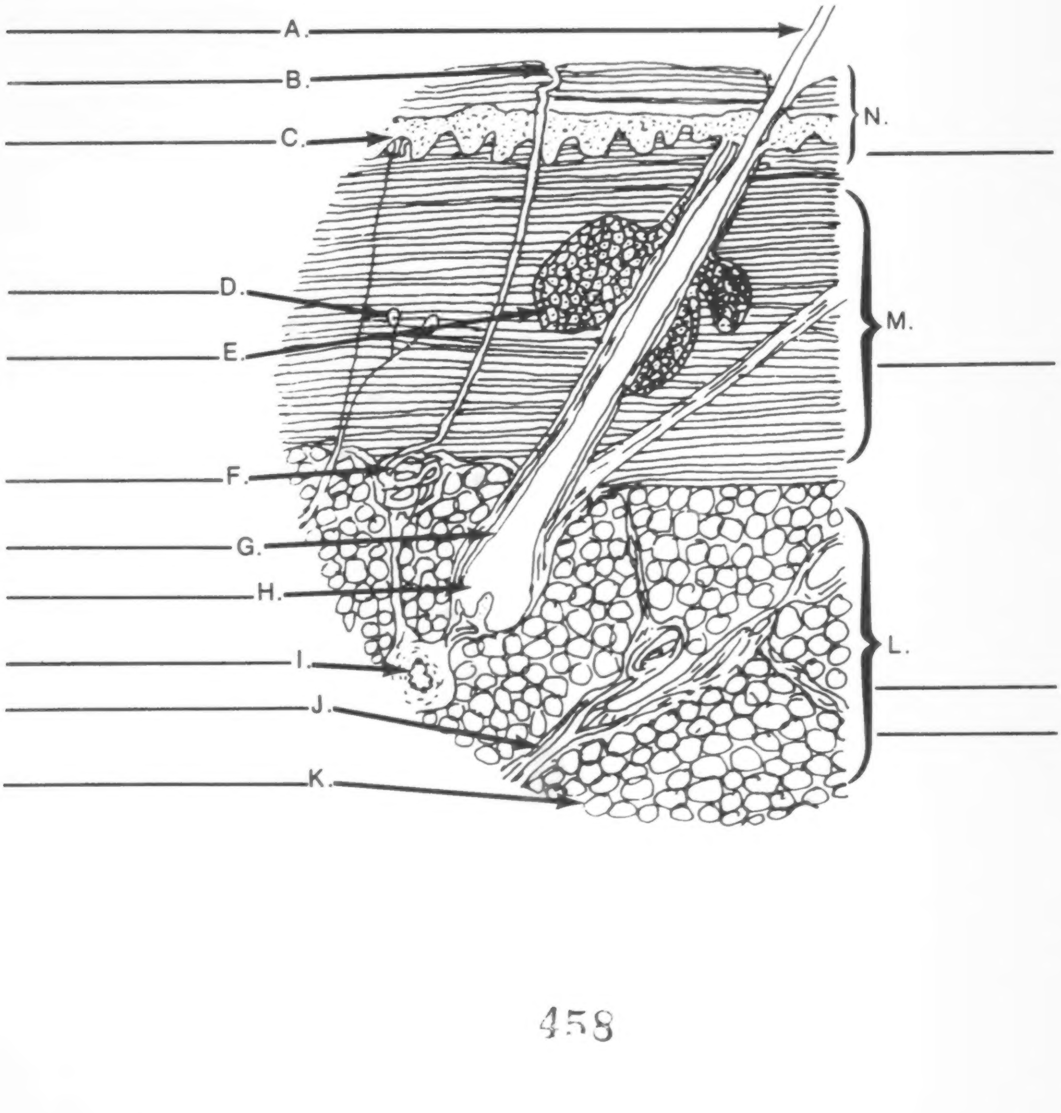
INTEGUMENTARY SYSTEM
UNIT I

ASSIGNMENT SHEET #1 — IDENTIFY PARTS OF THE SKIN

NAME ______________________________ SCORE ______________

The skin is the first line of defense for all body systems. The skin can repair itself rapidly when injured. Old skin sloughs off each day and new layers appear in its place. We need to be aware of the different parts of our skin as this knowledge is important in how we take care of this important covering of our bodies.

In this assignment sheet, you are given an illustration of the different parts of the skin. Review Section II of the Information Sheet and then label the illustration below from memory.



SKELETAL SYSTEM
UNIT II

UNIT OBJECTIVE

After completing this unit, the student should be able to describe the structure and function of the skeletal system. The student will show this ability by completing the unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match to their correct definitions terms associated with the skeletal system.
2. List functions of the skeletal system.
3. List and describe ways of maintaining the skeletal system.
4. Select from a list materials that make up the composition of bones.
5. Classify types of bones.
6. Distinguish between the two parts of the human skeleton.
7. Identify bones of the skull.
8. Label regions of the vertebral column.
9. Complete statements concerning characteristics of ribs and the sternum.
10. Identify bones of the appendicular skeleton.
11. Select true statements concerning the function of the articular system.
12. Classify joints according to the amount of movement.
13. Match types of movable joints with their correct characteristics.
14. Match types of articular movements with their correct description.
15. Describe the education and duties of health occupations related to the skeletal system.

SKELETAL SYSTEM
UNIT II

INFORMATION SHEET

I. Terms and definitions

   A. **Appendicular** — Pertaining to a limb or appendage

   B. **Arthrology** — Science dealing with the study of joints

   C. **Articulation** — Connection of bones; a joint

   D. **Axial** — Pertaining to a line running through the center of a body; also pertaining to head and trunk

   E. **Bursa** — Padlike sac or cavity lined with a synovial membrane and filled with synovial fluid, which helps to reduce friction between moving parts; found in connective tissue usually near a joint

   F. **Cartilage** — Dense connective tissue consisting of cells embedded in a matrix that is firm, compact, and capable of withstanding pressure and tension; attached to bone surfaces at the joints

   G. **Condyle** — Bony prominence that resembles part of a knuckle

   H. **Costal** — Pertaining to the ribs

   I. **Joint** — Point of junction between two bones

   J. **Ligament** — Band of fibrous connective tissue connecting bones, cartilages, and other structures and serving for support or attachment of fascia or muscles

   K. **Os** — Bone

   L. **Ossicle** — Any small bone, especially one of the small bones in the ear

   M. **Osteology** — Science dealing with the study of bones

   N. **Skeletal system** — System of the body involving the bones, joints, and their attachments

   O. **Tendon** — Narrow strip of dense connective tissue that attaches muscle to bone

II. Functions of the skeletal system

   A. Provides support and gives shape to the body

   B. Protects the delicate, vital organs

   EXAMPLE: Skull protects the brain; ribs protect the heart and lungs.

INFORMATION SHEET

C. Assists in body movement

(NOTE: Bones, with their joints, are levers. Muscles are anchored firmly to the bones. As a muscle contracts, it applies force to the bony levers, resulting in movement.)

D. Manufactures blood cells in the red bone marrow

(NOTE: These include all the red blood cells [in the adult], most of the white blood cells, and the platelets.)

E. Stores minerals such as calcium and phosphorus

III. Ways of maintaining the skeletal system

A. Maintain an adequate diet for growth and maintenance

(NOTE: For proper body functioning in all the body systems, a well-balanced diet is essential.)

B. Exercise regularly

C. Maintain good posture

D. Use proper body mechanics at all times

E. Give special attention to foot care

EXAMPLE: Make sure shoes fit properly.

(NOTE: Shoes that fit poorly can cause flat feet, give poor support, and cause ingrown toenails. Remember that feet have to support the skeleton.)

IV. Composition of bones

A. Inorganic salts

EXAMPLES: Calcium, phosphorus

B. Organic materials

EXAMPLES: Bone cells, blood vessels, nerves, cartilage

C. Water

INFORMATION SHEET

V. Types of bones

A. Long bones

(NOTE: The length of the bone is greater that its width.)

1. Humerus
2. Radius
3. Ulna
4. Femur
5. Tibia
6. Fibula
7. Metacarpals
8. Metatarsals
9. Phalanges

B. Short bones

(NOTE: The length and width are nearly equal.)

1. Carpals
2. Tarsals

C. Flat bones

(NOTE: Two layers of compact bone are separated by a narrow space.)

1. Several cranial bones (frontal and parietal)
2. Ilium
3. Ribs
4. Scapula

D. Irregular bones

(NOTE: Irregular bones are in shapes that do not fit into the first three categories.)

1. Vertebrae
2. Sphenoid
3. Ethmoid
4. Sacrum
5. Coccyx
6. Mandible

INFORMATION SHEET

E. Sesamoid bones

(NOTE: A small nodular bone is embedded in a tendon or joint capsule.)

1. Patella

2. Bones found between carpals and metacarpals, and tarsals and metatarsals

VI. Human skeleton

A. Axial skeleton (See Figure 1)

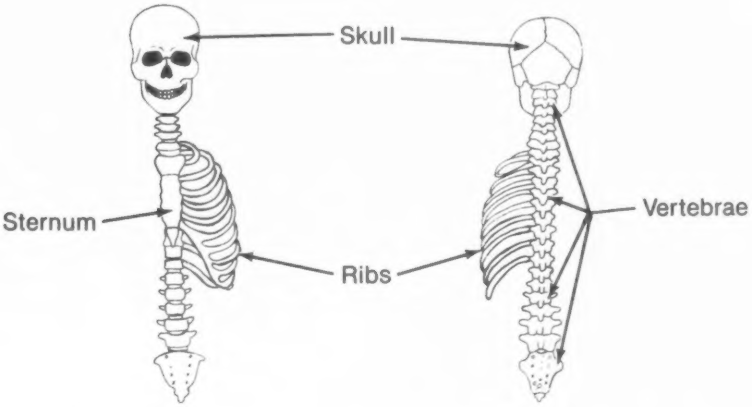
1. Contains 80 bones

2. Consists of skull, vertebral column, ribs, and sternum

3. Forms upright part or axis of body

EXAMPLE:

FIGURE 1



B. Appendicular skeleton (See Figure 2)

1. Contains 126 bones

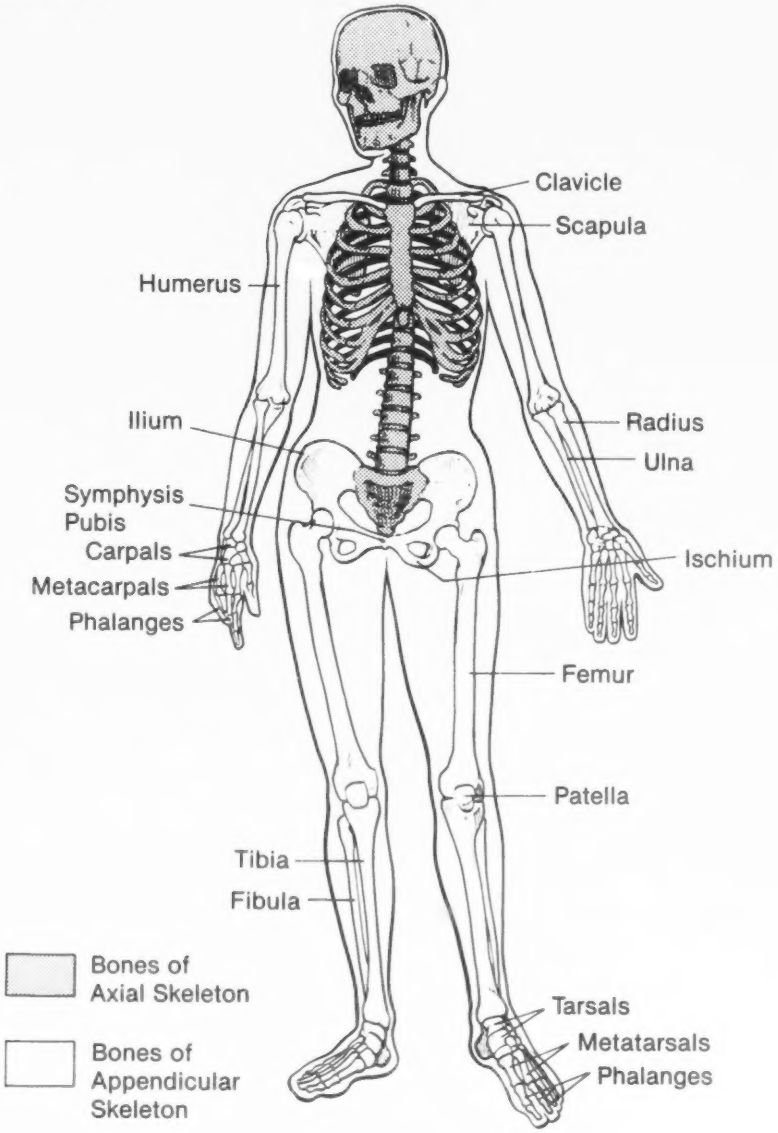
2. Consists of shoulder, pelvic girdle, and upper and lower extremities

INFORMATION SHEET

3. Attaches to axis as appendages

EXAMPLE:

FIGURE 2


Clavicle
Scapula
Humerus
Ilium
Radius
Ulna
Symphysis Pubis
Carpals
Ischium
Metacarpals
Phalanges
Femur
Patella
Tibia
Fibula
Bones of Axial Skeleton
Tarsals
Metatarsals
Bones of Appendicular Skeleton
Phalanges

Shirley A. Badasch/Doreen S. Chesebro, THE HEALTH CARE WORKER: An Introduction to Health Occupations, © 1985, p. 85 (A Brady Publication). Reprinted by permission of Prentice-Hall, Inc., Englewood Cliffs, New Jersey.

INFORMATION SHEET

VII. Bones of the skull

(NOTE: The 28 bones of the skull protect the brain, make chewing and speech possible, and provide shape for facial features.)

A. Cranium — 8 bones (Figure 3 and Table 1)

FIGURE 3

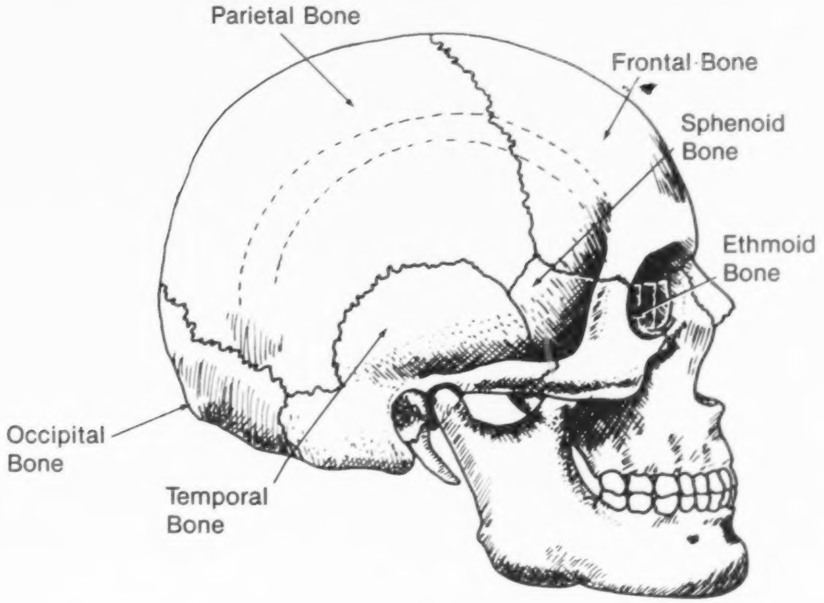

Parietal Bone
Frontal Bone
Sphenoid Bone
Ethmoid Bone
Occipital Bone
Temporal Bone

TABLE 1

Name of Bone	Number	Location
Frontal	1	Forehead
Parietal	2	Top of cranium behind frontal bone
Temporal	2	Lower sides of cranium Contain middle and inner ear structures
Occipital	1	Posterior part of cranium
Sphenoid	1	Crosswise through mid-portion of cranium Contains *sella turcica* (Turk's saddle), a saddle-shaped depression on upper surface of the sphenoid body that contains pituitary gland
Ethmoid	1	Posterior to nasal bones and anterior to sphenoid

INFORMATION SHEET

B. Face — 14 bones (Figure 4 and Table 2)

FIGURE 4

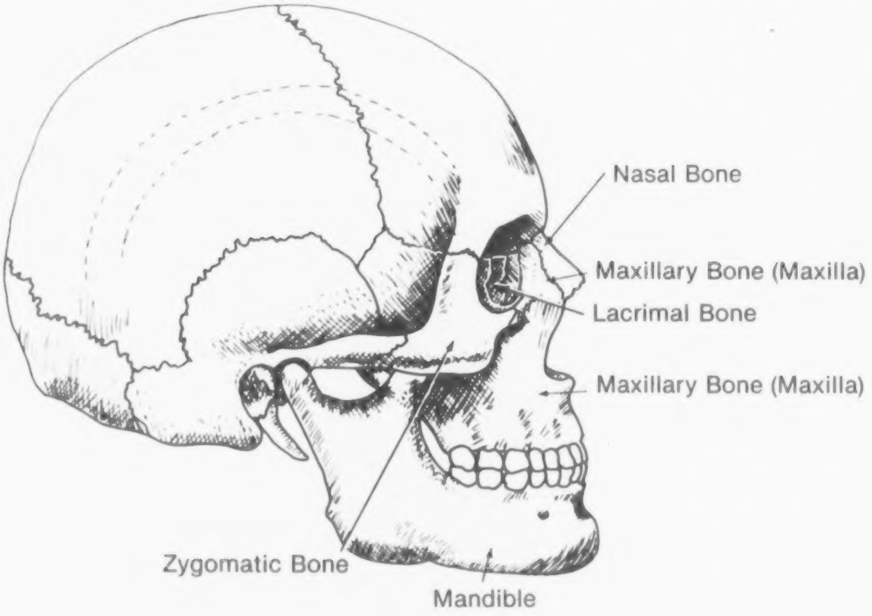

Nasal Bone
Maxillary Bone (Maxilla)
Lacrimal Bone
Maxillary Bone (Maxilla)
Zygomatic Bone
Mandible

TABLE 2

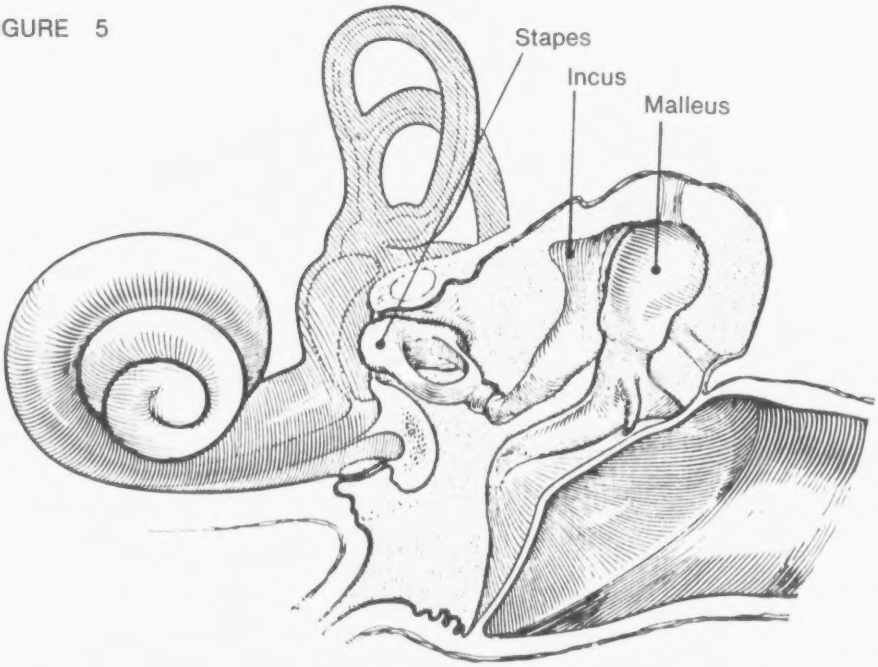
Name of Bone	Number	Location
Nasal	2	Upper part of bridge of nose
Maxillary	2	Upper jaw bones
Zygomatic	2	Cheekbones
Mandible	1	Lower jawbone
Lacrimal	2	Posterior and lateral to nasal bones Part of side walls of nasal cavity
*Palatine	2	Posterior part of hard palate Part of side walls of nasal cavity
*Inferior conchae (turbinates)	2	Inner surface of side wall and nasal cavity Above roof of mouth
*Vomer	1	Lower and posterior part of nasal septum

*These bones are not included on the unit test.

INFORMATION SHEET

C. Ear — 6 ossicles (Figure 5 and Table 3)

FIGURE 5



From *Melloni's Illustrated Medical Dictionary*, second edition, by Ida Dox, Biagio John Melloni, and Gilbert M. Eisner © 1985, the Williams & Wilkins Co., Baltimore.

TABLE 3

Name of Bone	Number	Shape	Location
Malleus	2	Hammer	Middle ear
Incus	2	Anvil	Middle ear
Stapes	2	Stirrup	Middle ear

VIII. Regions of the vertebral column (See Figure 6)

(NOTE: Vertebrae protect the spinal cord and provide support for the torso. The vertebral column consists of 26 bones and is divided into 5 regions. An individual vertebra in a region that has more than one bone is identified by a letter [**C** for cervical, **T** for thoracic, or **L** for lumbar] plus a number to indicate its location from the top of that region. For example, the fourth vertebra from the top of the cervical region would be called **C4**.)

INFORMATION SHEET

A. **Cervical region** — 7 vertebrae

(NOTE: The first cervical vertebra, C1 is called the *atlas*; it supports the skull, articulates with the axis, and allows for flexion, extension, and rotation of the head. The second cervical vertebra, C2, is called the *axis*; it articulates with the atlas to form a pivot joint to allow for side-to-side rotation of the head.)

B. **Thoracic region** — 12 vertebrae

(NOTE: Twelve pairs of ribs attach to these vertebrae to form the thoracic cavity.)

C. **Lumbar region** — 5 vertebrae

(NOTE: This region functions as the "workhorse" of the body.)

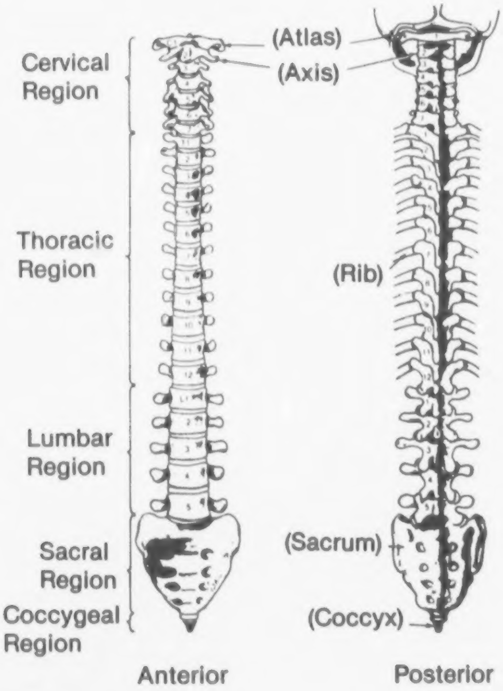
D. **Sacral region** — one wedge-shaped bone called the **sacrum**

(NOTE: Five separate vertebrae in the embryo fused together to form the sacrum.)

E. **Coccygeal region** — one bone called the *coccyx*

(NOTE: Four or five separate vertebrae in the embryo fused together to form the coccyx.)

FIGURE 6


Cervical Region
Thoracic Region
Lumbar Region
Sacral Region
Coccygeal Region
(Atlas)
(Axis)
(Rib)
(Sacrum)
(Coccyx)
Anterior
Posterior

INFORMATION SHEET

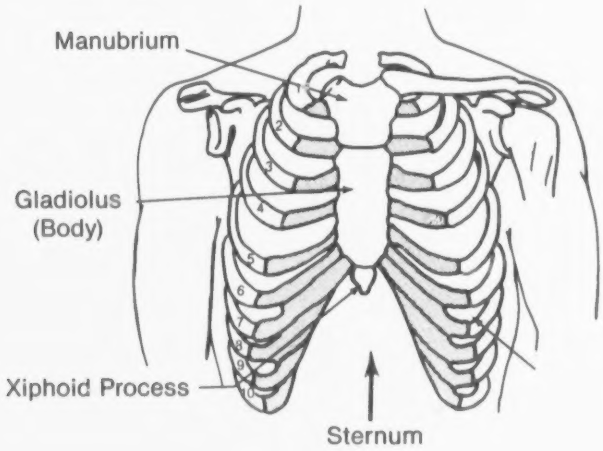
IX. Characteristics of sternum and ribs — 25 bones

(NOTE: The sternum and ribs, along with the thoracic vertebrae, form the thoracic cavity.)

A. Sternum

1. Sternum is a single bone, also called the *breastbone*
2. Sternum contains three divisions (See Figure 7)
   a. Manubrium — Upper part
   b. Gladiolus — Body
   c. Xiphoid process — Lower part

FIGURE 7



B. Ribs (See Figures 8 and 9)

1. There are 12 pairs of ribs (24 bones)
2. All ribs attach to the thoracic region of vertebral column
3. Upper 7 pairs of ribs are called *true ribs*
4. True ribs are attached to the sternum by costal cartilage
5. The lower 5 pairs of ribs are called *false ribs*
6. False ribs are not directly attached to the sternum
7. The upper 3 pairs of false ribs are attached to the seventh costal cartilage
8. The lower 2 pairs of false ribs are not attached at all, and are called *floating ribs*

INFORMATION SHEET

FIGURE 8

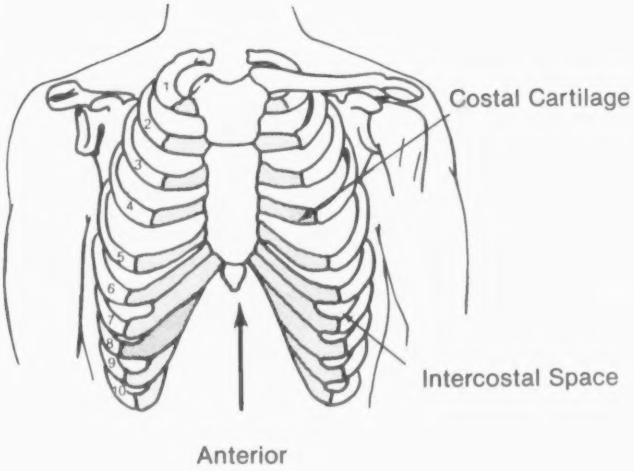
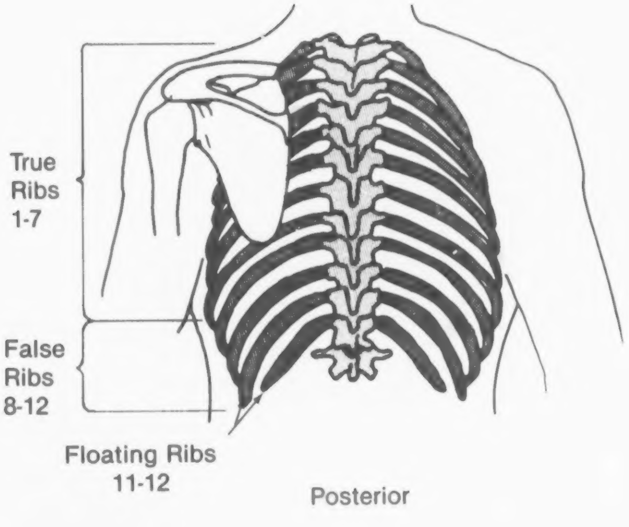

1
2
3
4
5
6
7
8
9
10
Costal Cartilage
Intercostal Space
Anterior

FIGURE 9

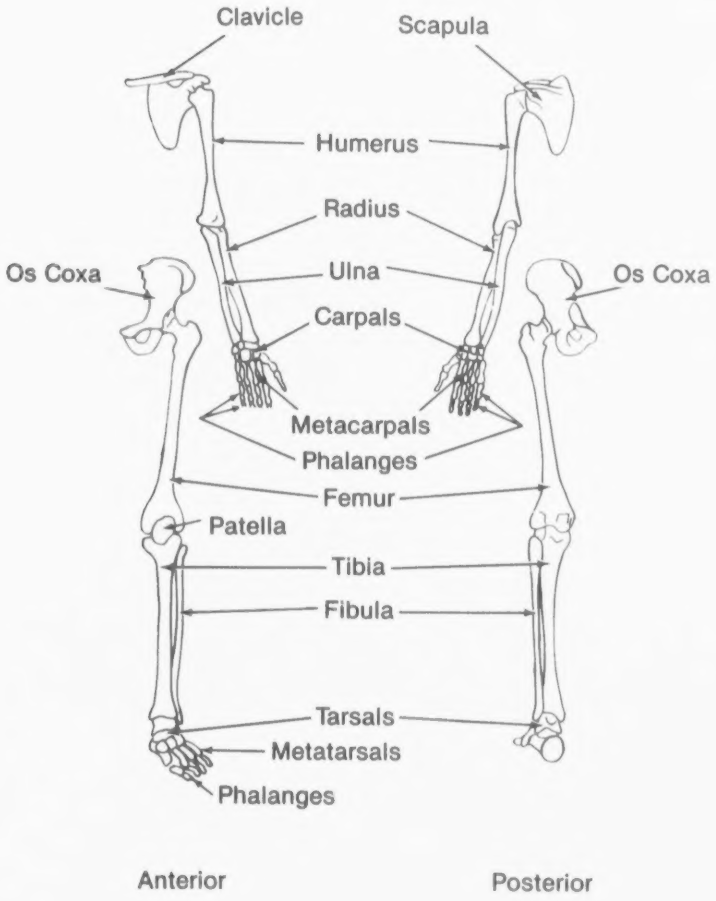

True
Ribs
1-7
False
Ribs
8-12
Floating Ribs
11-12
Posterior

INFORMATION SHEET

X. Bones of the appendicular skeleton (Figure 10 and Table 4)

(NOTE: The appendicular skeleton has 126 bones.)

FIGURE 10


Clavicle
Scapula
Humerus
Radius
Os Coxa
Ulna
Os Coxa
Carpals
Metacarpals
Phalanges
Femur
Patella
Tibia
Fibula
Tarsals
Metatarsals
Phalanges
Anterior
Posterior

INFORMATION SHEET

TABLE 4

Area	Name of Bone	Number	Location
Shoulder	Clavicle	2	Collarbone
	Scapula	2	Shoulder blade
Upper extremity	Humerus	2	Long bone in upper arm
	Radius	2	Long bone on thumb side of forearm
	Ulna	2	Long bone, longer than radius, on little-finger side of forearm
	Carpals	16	Wrist bones
	Metacarpals	10	Long bones forming framework of palm of hand
	Phalanges	28	Miniature long bones of fingers: three in each finger, two in each thumb
Pelvic girdle	Os coxae (os innominatum)	2	Large innominate bones that, together with sacrum and coccyx, make up the pelvis; early in life each innominate bone consists of three separate bones—ilium, ischium, and pubis—which fuse into a single, massive bone by adulthood
Lower extremity	Femur	2	Thighbone, which is the longest, strongest bone in the body
	Patella	2	Kneecap, which is the largest sesamoid bone in the body
	Tibia	2	Shinbone, which is the largest bone in lower leg
	Fibula	2	Long, slender bone on lateral side of lower leg
	Tarsals	14	Ankle bones, which form heel and proximal or posterior half of foot
	Metatarsals	10	Long bones that form framework of sole of foot
	Phalanges	28	Miniature, long bones of toes: two in each great toe, three in other toes

INFORMATION SHEET

XI. Functions of the articular system

A. Joints allow for changes of position and body motion

B. Joints help to bear weight of the body

C. The joint capsule, ligaments, tendons, muscles, and articular discs provide stability for the joint

D. Synovial fluid lubricates the joints and nourishes the cartilages

XII. Articular classifications (Table 5)

TABLE 5

Name	Degree of Movement	Characteristics	Examples
Synarthroses (Fibrous joints)	Immovable	Do not have a joint cavity Fibrous cartilage or bone tissue grows between the articulating surfaces	Sutures of the skull Facial bones except mandible Distal tibiofibular joint
Amphiarthroses (Cartilaginous joints)	Slightly movable	Held together by cartilage Two types:	
		Symphyses — "A growing together" of bones at body midline	Symphysis [illegible]ubis (between [illegible]bic bones) and joints between the vertebrae
		Synchondroses — Held together with cartilage	Joints between ribs and sternum held together by costal cartilages
Diarthroses (Synovial joints)	Movable	Have a joint cavity enclosed by articular capsule Have ligaments that cover and connect the ends of opposing bones Have synovial fluid Are divided into six classes	Hip and femur joint Knee joint Wrist joint Elbow joint Shoulder joint

INFORMATION SHEET

XIII. Types of movable joints

A. Ball and socket (See Figure 11)

EXAMPLES: Hip and femur (acetabulum)
Humerus and glenoidcavity of scapula (shoulder joint)

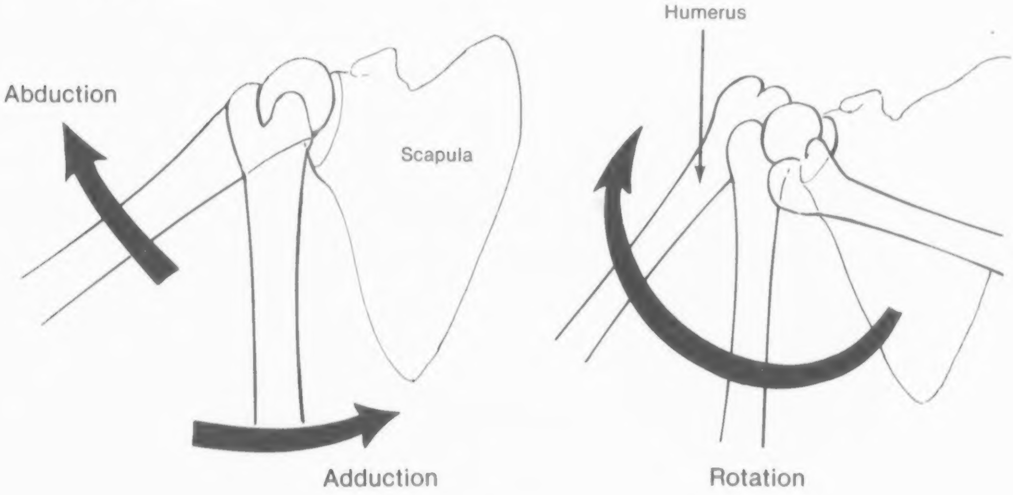
1. Ball-shaped head fits into a concave socket

   (NOTE: *Concave* means curved inward like the inside of a cave.)

2. Movement is in all planes in addition to rotation

   (NOTE: Ball and socket joints provide the widest range of motion. The shoulder joint is the most freely movable joint in the body.)

FIGURE 11



B. Hinge (See Figure 12)

EXAMPLES: Knee joint, elbow joint, finger joint

1. Convex surface fits into a concavity

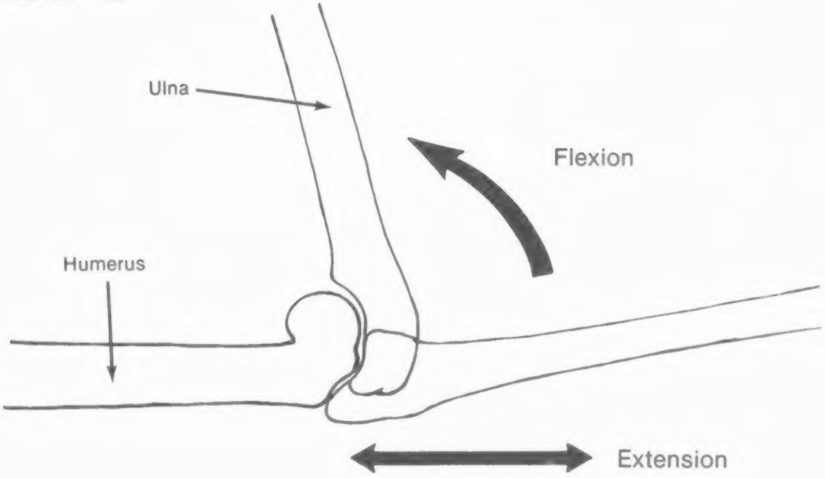
   (NOTE: Convex means curved outward like the outside of a ball.)

2. Motion is limited to flexion and extension in a single plane

   (NOTE: Angular movement is in one direction, like a door on its hinges.)

INFORMATION SHEET

FIGURE 12


Ulna
Flexion
Humerus
Extension

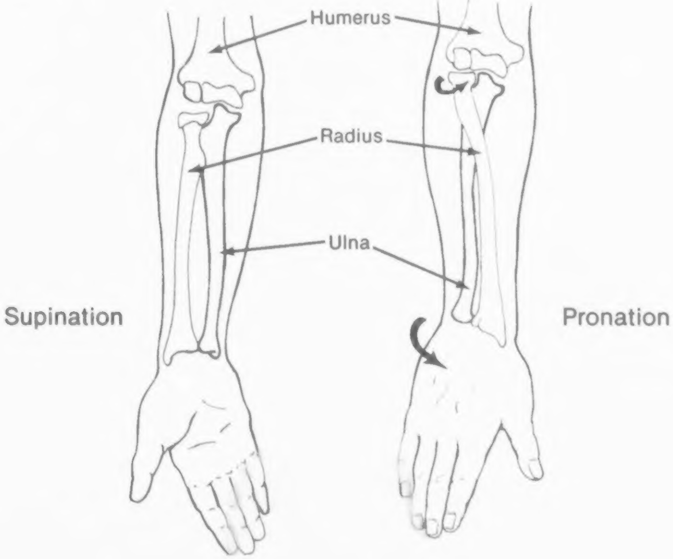
C. Pivot (See Figure 13)

EXAMPLES: Articulation between axis and atlas for rotation of head
Joint between radius and ulna

1. Pivot-like process rotates within a bony fossa around a longitudinal axis

2. Motion is limited to rotation to the side

FIGURE 13


Humerus
Radius
Ulna
Supination
Pronation

INFORMATION SHEET

D. Condyloid

EXAMPLE: Joint between radius and carpal bones

1. Oval-shaped condyle fits into an elliptical cavity

   (NOTE: The condyle anchors muscle ligaments.)

2. Motion is possible in two planes at right angles to each other

E. Saddle

EXAMPLES: Joints between carpals and thumb metacarpals

1. Articular surface of each bone is concave in one direction and convex in another

2. Movement is possible in two directions

F. Gliding

EXAMPLES: Joints between carpals and between tarsals

1. Articular surfaces are flat, or with one surface slightly concave and the other slightly convex

2. Movement is gliding only

XIV. Types of articular movement

A. **Flexion** — Bending or decreasing the angle between two bones (See Figure 14)

B. **Extension** — Straightening or increasing the angle between two bones (Figure 15)

FIGURE 14

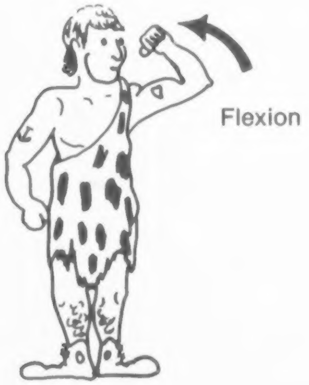
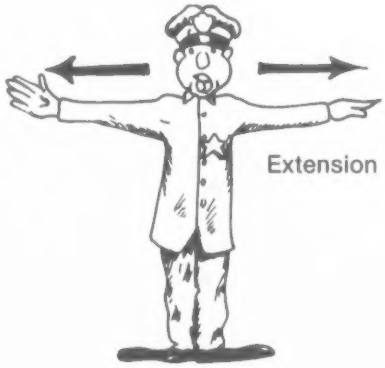


FIGURE 15



INFORMATION SHEET

C. **Abduction** — Moving the bone away from the midline (See Figure 16)

D. **Adduction** — Moving the bone toward the midline (Figure 17)

FIGURE 16

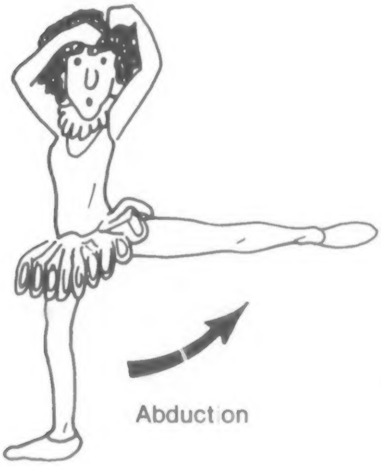
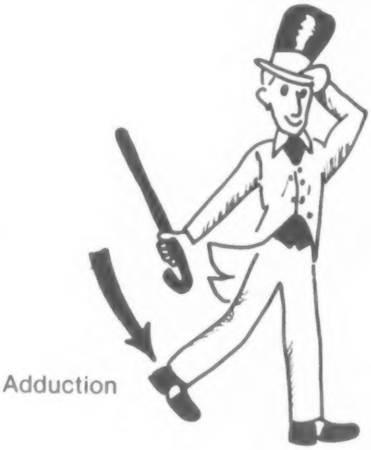
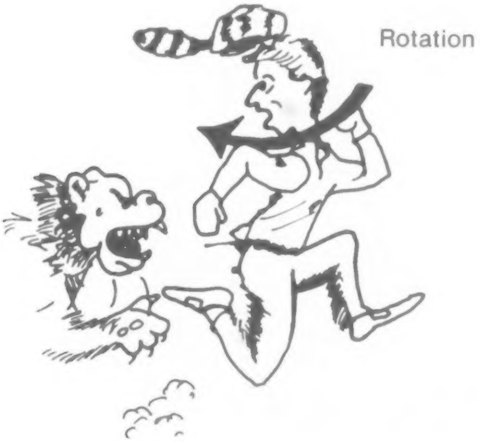


FIGURE 17



E. **Rotation** — Moving the bone around a central axis; the plane of motion is perpendicular to the axis (Figure 18)

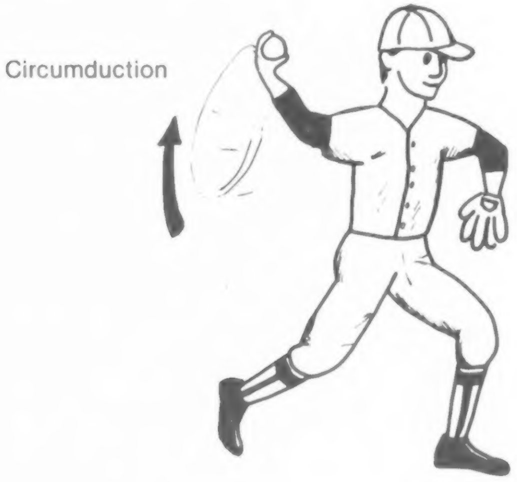
FIGURE 18



INFORMATION SHEET

F. **Circumduction** — Moving the bone so that the end of it describes a circle and the sides of it describe a cone (Figure 19)

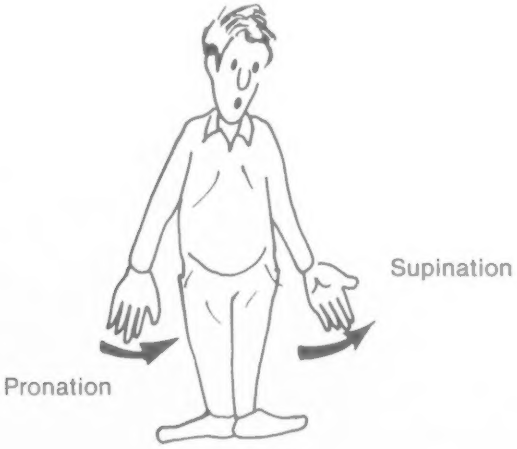
FIGURE 19



G. **Supination** — Moving the bones of the forearm so that the radius and ulna are parallel; the palm is moved from a posterior to an anterior position (See Figure 20)

H. **Pronation** — Moving the bones of the forearm so that the radius and ulna are not parallel; the palm is moved from an anterior to a posterior position (Figure 20)

FIGURE 20

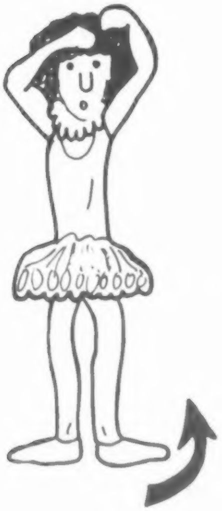


INFORMATION SHEET

I. **Eversion** — Moving the sole of the foot outward at the ankle joint (See Figure 21)

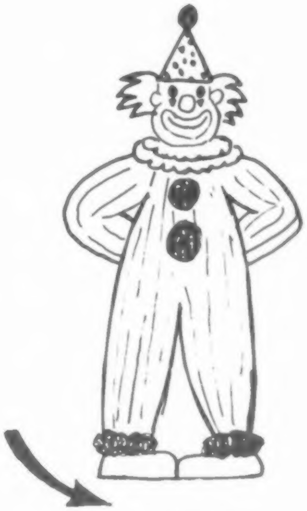
J. **Inversion** — Moving the sole of the foot inward at the ankle joint (Figure 22)

FIGURE 21



Eversion

FIGURE 22



Inversion

INFORMATION SHEET

XV. Health occupations related to the skeletal system (Table 6)

TABLE 6

Occupation	Education	Duties
Orthopedist	Specialization after medical school	Deals with the preservation and restoration of the function of the skeletal system and its articulations and associated structures
Orthotic/prosthetic	Associate degree in orthotics/prosthetics	Assists the orthotist/prosthetist in caring for clients by making casts, measurements, and model specifications; and fitting supportive appliances or artificial limbs
Orthotist/prosthetist	Bachelor's degree in orthotics/prosthetics with one year of suitable experience	Writes specifications for, makes, fits, and repairs braces, appliances, and artificial limbs following the prescription of a physician
Physical therapist	Bachelor of Science or Bachelor of Health Science in physical therapy	Performs procedures that promote healthy use of the musculo-skeletal system, prevent disabilities, and restore functioning and mobility
Physical therapy aide	Training on the job	Performs housekeeping and maintenance function in the physical therapy department, helps transport clients, prepares area for treatment, and may assist the physical therapist in the selected management of clients
Physical therapy assistant	Completion of a two-year postsecondary program leading to an associate degree	Works under the direction of a qualified physical therapist, and performs duties delegated by the physical therapist; may function in direct patient services, departmental support services, and education

SKELETAL SYSTEM
UNIT II

ASSIGNMENT SHEET #1 — CLASSIFY BONES ACCORDING TO TYPE

NAME ______________________ SCORE ____________

In order to care for a client with any orthopedic problems, you must know the type, name, and location of bones. To help you remember them, complete this assignment sheet on types of bones.

Classify each of the following bones according to type (shape).

EXAMPLE: Ribs — Flat bones

A. Carpals ______________________

B. Radius ______________________

C. Patella ______________________

D. Scapula ______________________

E. Femur ______________________

F. Fibula ______________________

G. Sacrum ______________________

H. Tarsals ______________________

I. Vertebrae ______________________

J. Phalanges ______________________

SKELETAL SYSTEM
UNIT II

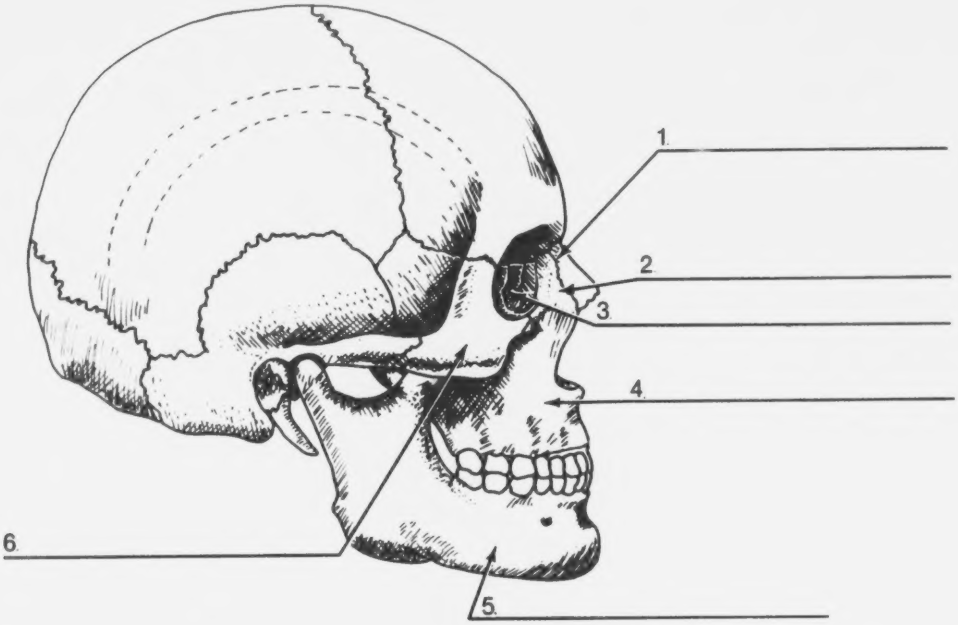
ASSIGNMENT SHEET #2 — LABEL THE BONES OF THE SKULL

NAME ______________________________ SCORE ______________

In diagnosis and documentation of head injuries, it is important that you can name and locate the bones of the skull. This assignment sheet will help you practice recalling the names and positions of these bones.

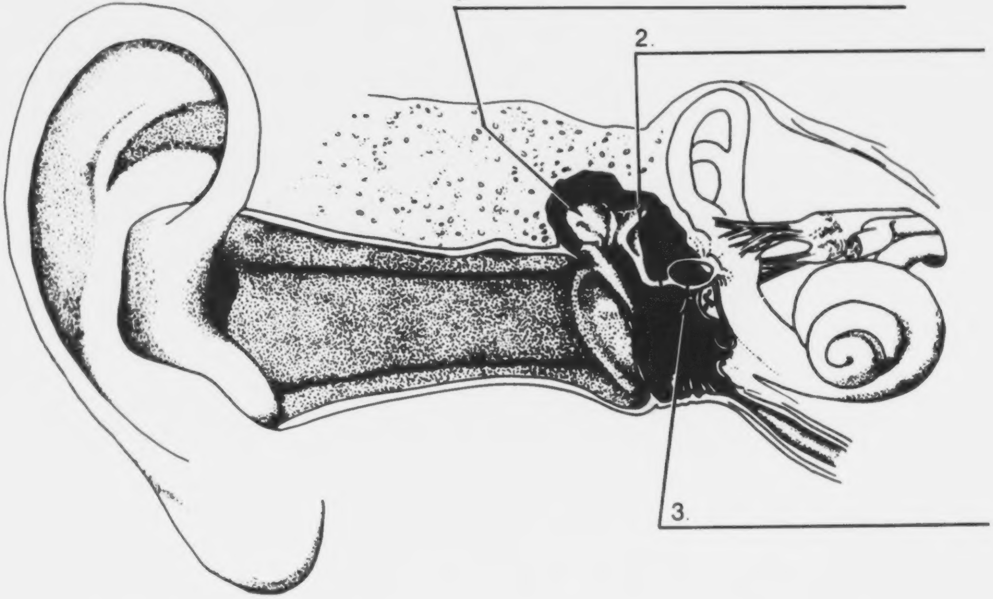
Label the bones of the skull in the following illustrations. Write the correct names in the blanks.

A.

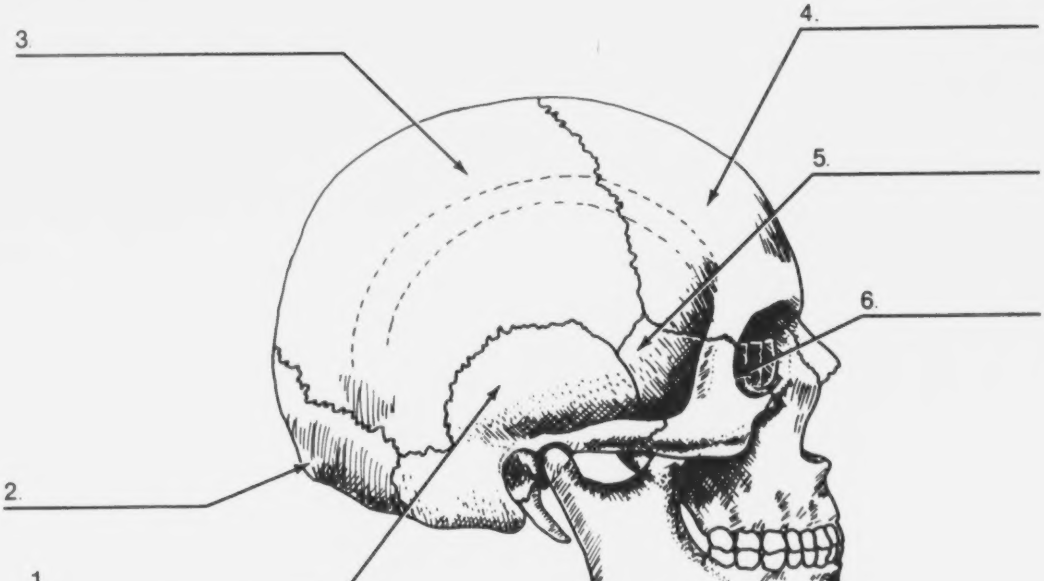


ASSIGNMENT SHEET #2

B.



C.



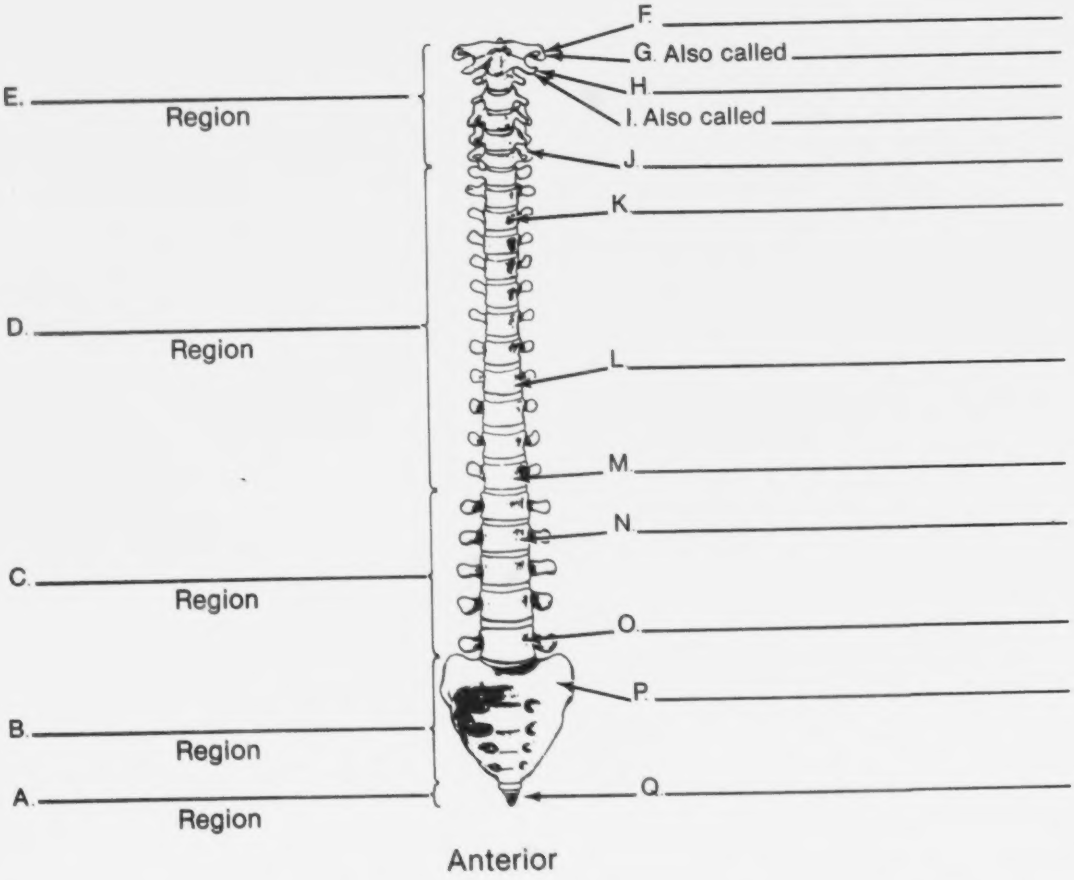
SKELETAL SYSTEM
UNIT II

ASSIGNMENT SHEET #3 — LABEL REGIONS AND BONES OF THE VERTEBRAL COLUMN

NAME ______________________________ SCORE ______________

Many people suffer from back problems. Documentation of those problems will mention the region of the affected vertebral column. This assignment sheet will help you practice identifying the regions of the vertebral column.

Identify the regions and bones in the following illustration of the vertebral column. Remember that vertebrae are identified by a letter **and** a number unless they have a specific name.


F. ______________
G. Also called ______________
H. ______________
I. Also called ______________
J. ______________
K. ______________
E. ______________ Region
L. ______________
D. ______________ Region
M. ______________
N. ______________
C. ______________ Region
O. ______________
P. ______________
B. ______________ Region
Q. ______________
A. ______________ Region
Anterior

SKELETAL SYSTEM
UNIT II

ASSIGNMENT SHEET #4 — LABEL THE BONES OF THE APPENDICULAR SKELETON

NAME ______________________________ SCORE ______________

When treating a client with a disorder of the bones or joints, a physician will not refer to the sternum as the breastbone; therefore, it is important you know the names and locations of bones in the appendicular skeleton. To practice recalling their names and locations, fill in this assignment sheet.

Label the bones in the following illustration. Write the correct names in the blanks provided.

A. ______________________________

B. ______________________________

C. ______________________________

D. ______________________________

E. ______________________________

F. ______________________________

G. ______________________________

H. ______________________________

I. ______________________________

J. ______________________________

K. ______________________________

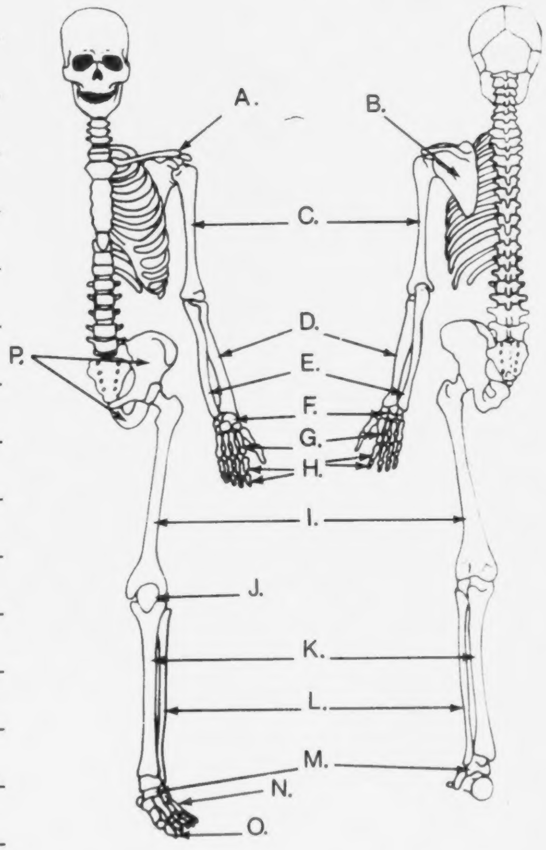
L. ______________________________

M. ______________________________

N. ______________________________

O. ______________________________

P. ______________________________



SKELETAL SYSTEM
UNIT II

ASSIGNMENT SHEET #5 — ANSWER STUDY QUESTIONS RELATED TO THE SKELETAL SYSTEM

NAME ____________________ SCORE __________

This assignment sheet is designed to aid you in studying for the unit test and in assessing your knowledge of the skeletal system. Each question is the multiple-choice type with four possible answers, with the answers listed in alphabetical order. Read each question carefully and then select the answer that best completes the statement or answers the question. Write the correct numbers in the blanks. You may use the information sheet and additional references to answer the questions.

_____A. Another name for bone is

1. Articulation
2. Diaphysis
3. Os
4. Process

_____B. The skeletal system stores

1. Calcium
2. Hemoglobin
3. Iodine
4. Nitrogen

_____C. All of the following are types of bones **EXCEPT**

1. Flat
2. Long
3. Short
4. Thin

_____D. Which of the following would be classified as a long bone?

1. Carpals
2. Femur
3. Ribs
4. Sacrum

_____E. There are 126 bones in the __________ skeleton,

1. Appendicular
2. Articular
3. Axial
4. Entire

ASSIGNMENT SHEET #5

_____F. The first cervical vertebrae is called

1. Acetabulum
2. Apex
3. Atlas
4. Axis

_____G. A common name for the tibia is

1. Anklebone
2. Collarbone
3. Shinbone
4. Thighbone

_____H. The breastbone is the

1. Clavicle
2. Humerus
3. Scapula
4. Sternum

_____I. Another name for the forehead bone is

1. Frontal
2. Occipital
3. Parietal
4. Temporal

_____J. What bone forms the central side of the cranium around the ear?

1. Frontal
2. Occipital
3. Parietal
4. Temporal

_____K. The upper vertebrae in the neck region are the

1. Seven cervical vertebrae
2. Seven lumbar vertebrae
3. Twelve cervical vertebrae
4. Twelve thoracic vertebrae

_____L. The bones of the ankle are the

1. Carpals
2. Hyoid
3. Tarsals
4. Zygoma

ASSIGNMENT SHEET #5

_____M. The cheekbones are called the

1. Maxillary bones
2. Turbinates
3. Vomer
4. Zygomatic bones

_____N. Which of the following two bones make up the shoulder?

1. Clavicle and scapula
2. Humerus and clavicle
3. Scapula and humerus
4. Sternum and scapula

_____O. The os coxae is formed in early life from the following bones: ilium,

1. Ischium and pubis
2. Ischium and sacrum
3. Sacrum and coccyx
4. Sacrum and pelvis

_____P. The long bone on the little-finger side of the forearm is called the

1. Fibula
2. Humerus
3. Radius
4. Ulna

_____Q. How many pairs of ribs are there?

1. 7
2. 12
3. 24
4. 8

_____R. All of the following are types of joints **EXCEPT**

1. Amphiarthroses
2. Diarthroses
3. Synarthroses
4. Triarthroses

_____S. Cartilaginous joints are called

1. Amphiarthroses
2. Diarthroses
3. Synarthroses
4. Triarthroses

ASSIGNMENT SHEET #5

______T. The knee joint is an example of a

1. Ball-and-socket joint
2. Gliding joint
3. Hinge joint
4. Pivot joint

______U. The shoulders are an example of which type of joint?

1. Ball-and-socket
2. Hinge
3. Pivot
4. Saddle

______V. An immovable joint is a/an

1. Amphiarthrosis
2. Diarthrosis
3. Pivot joint
4. Synarthrosis

______W. The joint between the carpals is an example of a

1. Gliding joint
2. Hinge joint
3. Pivot joint
4. Saddle joint

______X. The bone in the upper arm is the

1. Clavicle
2. Humerus
3. Radius
4. Ulna

______Y. The bone above the knee is the

1. Femur
2. Fibula
3. Humerus
4. Tibia

MUSCULAR SYSTEM
UNIT III

UNIT OBJECTIVE

After completing this unit, the student should be able to describe the structure and function of the muscular system and apply principles of proper body mechanics. The student will show this ability by completing the assignment sheets and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match to their correct definitions terms associated with the muscular system.
2. List major functions of the muscles.
3. Select correct characteristics of muscle tissue.
4. Name types of muscles, given their actions.
5. Identify principal skeletal muscles.
6. List ways of maintaining a healthy muscular system.
7. Select from a list reasons for using proper body mechanics.
8. Describe education and duties of health occupations that are related to the muscular system.
9. Apply principles of body mechanics.

MUSCULAR SYSTEM
UNIT III

INFORMATION SHEET

I. Terms and definitions associated with the muscular system

   A. **Antagonist** — Muscle that counteracts with a prime mover

   B. **Atrophy** — To waste away

   C. **Body mechanics** — Coordination of body alignment, balance, and movement

   D. **Debilitating** — Weakening of tone in functions or organs of body

   E. **Electromyography** — Procedure that measures electrical impulses within muscle

      (NOTE: This diagnostic procedure allows a physician to determine whether or not the muscle is responding normally to a stimulus.)

   F. **Flaccid** — Lacking muscle tone

   G. **Intramuscular** — Within a muscle

   H. **Muscle fatigue** — Loss of muscle's power to contract after prolonged period of contraction

   I. **Myology** — The study of muscles

   J. **Posture** — Alignment and position of the body

   K. **Prime mover** — Muscle primarily responsible for a specific action

   L. **Skeletal muscles** — Bundles of striated muscle tissue surrounded by connective tissue

   M. **Tendon** — Narrow strip of dense connective tissue that attaches muscle to a bone

   N. **Tonus** — Slight tension in the muscle that is always present, even when muscle is resting

      (NOTE: Continued active use of a muscle causes it to increase in tone and size.)

II. Major functions of muscles

   A. Allow for movement

      (NOTE: Muscles function to allow any movement, including moving from place to place, movement of the pupil of the eye, and internal movement, such as blood pushing through vessels.)

INFORMATION SHEET

B. Produce heat and energy as a result of a chemical reaction within the muscle tissue

C. Determine body posture and body mechanics

D. Protect internal organs

III. Characteristics of muscle tissue

A. Contractility — Ability of muscle to shorten and thicken when given proper stimulus

B. Elasticity — Ability of muscle to return to its original length after stretching

C. Extensibility — Ability of muscle to stretch

D. Irritability — Ability of muscle to respond to stimulation

IV. Types of muscles and their actions

A. **Abductors** — Draw away from median line or center of body

EXAMPLE: Deltoid muscle abducts upper arm.

B. **Adductors** — Draw toward median line or center of body

EXAMPLE: Latissimus muscle adducts upper arm.

C. **Levators** — Lift a part

EXAMPLE: Intercostals raise ribs to expand rib cage.

D. **Flexors** — Bend a joint

EXAMPLE: Biceps femoris muscle flexes lower leg.

E. **Extensors** — Straighten or extend a limb

EXAMPLE: Rectus femoris muscle extends lower leg.

F. **Rotators** — Revolve a part on its axis

EXAMPLE: Trapezius muscle rotates head.

G. **Sphincters** — Ringlike muscles that close body opening

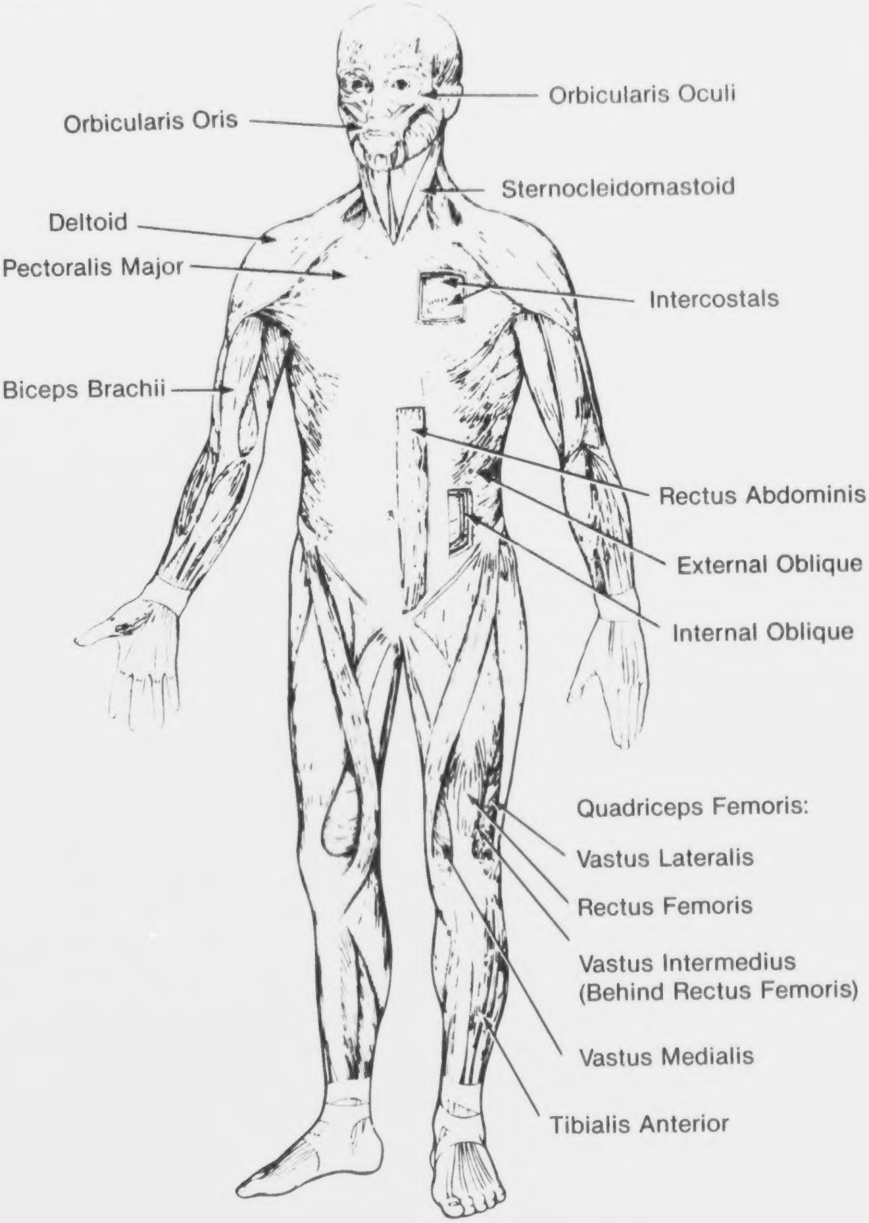
EXAMPLE: Anus

INFORMATION SHEET

V. Principle skeletal muscles (Figures 1 and 2)

A. Anterior muscles

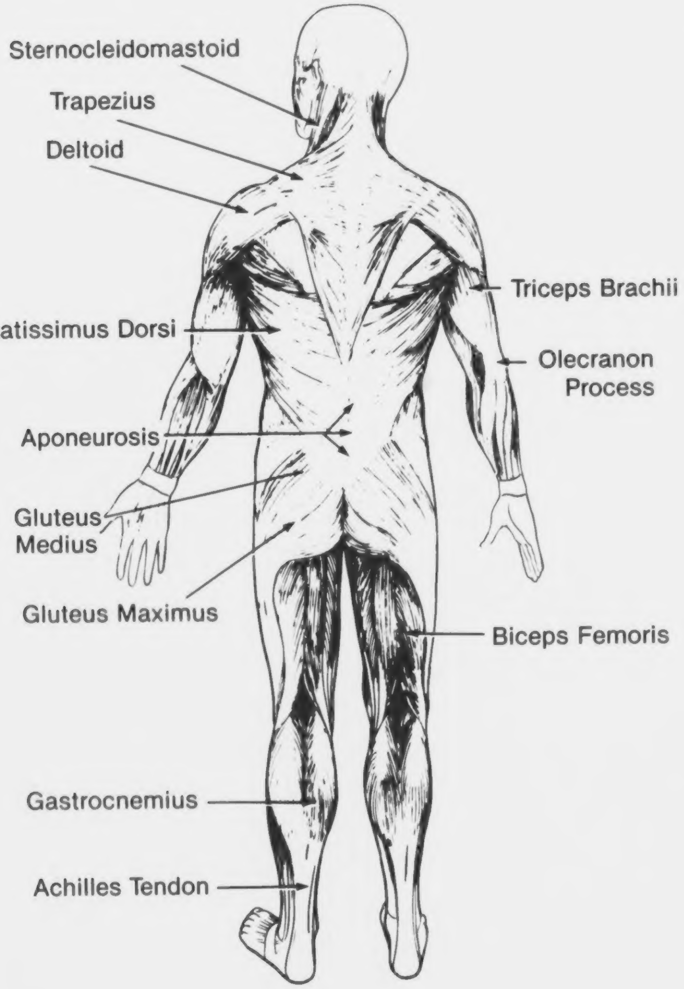
FIGURE 1


Orbicularis Oculi
Orbicularis Oris
Sternocleidomastoid
Deltoid
Pectoralis Major
Intercostals
Biceps Brachii
Rectus Abdominis
External Oblique
Internal Oblique
Quadriceps Femoris:
Vastus Lateralis
Rectus Femoris
Vastus Intermedius
(Behind Rectus Femoris)
Vastus Medialis
Tibialis Anterior

INFORMATION SHEET

B. Posterior muscles

FIGURE 2


Sternocleidomastoid
Trapezius
Deltoid
Triceps Brachii
Latissimus Dorsi
Olecranon Process
Aponeurosis
Gluteus Medius
Gluteus Maximus
Biceps Femoris
Gastrocnemius
Achilles Tendon

VI. Ways to maintain a healthy muscular system

A. Exercise regularly and sensibly

B. Avoid excessive load that may cause strain

(NOTE: Back injuries are an occupational hazard. Most injuries are caused by improper lifting techniques.)

INFORMATION SHEET

C. Learn to relax voluntary muscles at will

D. Rest sufficiently to relieve muscle fatigue

E. Use proper body mechanics at all times

F. Maintain an adequate diet

G. Maintain adequate oxygen supply

VII. Reasons for using proper body mechanics

A. Saving energy by making work easier

B. Preventing muscle strain

C. Increasing efficiency

D. Promoting good posture

E. Improving health and appearance

F. Setting example for others

G. Preserving muscle tone and strength

VIII. Health occupations related to the muscular system (Table 1)

TABLE 1

Occupation	Education	Duties
Massage therapist	Completion of an American Massage Therapy Association (AMTA) accredited program that includes five hundred class hours. Includes theory of anatomy and physiology, practice of massage techniques and medical ethics	Performs massage techniques for relaxation or treatment, including Swedish massage and hydrotherapy
Physical therapist	Bachelor's degree in physical therapy	Examines, evaluates, treats, and instructs people to detect, assess, prevent, correct, alleviate and limit physical disabilities, bodily malfunctions, and pain from injury, disease

INFORMATION SHEET

TABLE 1 (Continued)

Occupation	Education	Duties
Physical therapist assistant	Accredited two-year postsecondary program leading to an associate degree	Administers selected physical therapy treatment procedures under the direction and supervision of the physical therapist, participates in clerical activities, and assists with client education
Physical therapy aide	On-the-job training	Assists with support, household, and maintenance tasks
Rehabilitative therapist	Four-year physical therapy program and possibly a year's internship	Performs procedures that promote healthy use of the musculoskeletal system, prevent disabilities, and restore functioning and mobility. Category includes physical therapist, speech therapist, recreational therapist, sports medicine therapist and occupational therapist

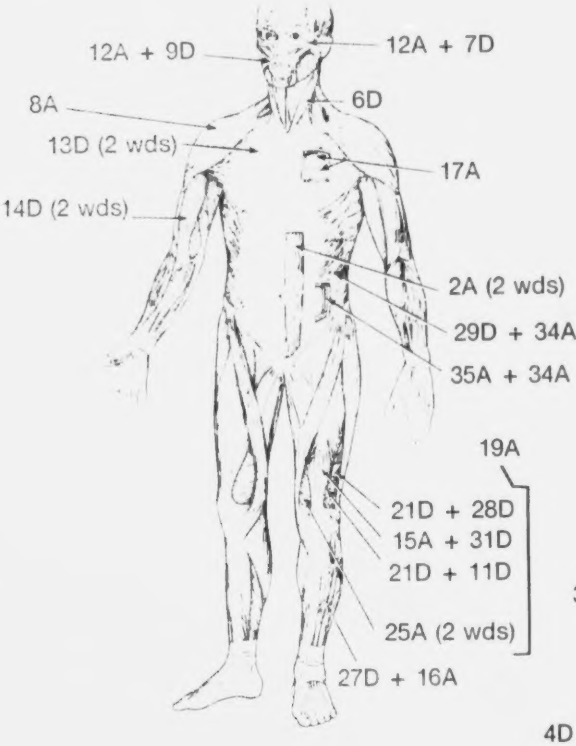
MUSCULAR SYSTEM
UNIT III

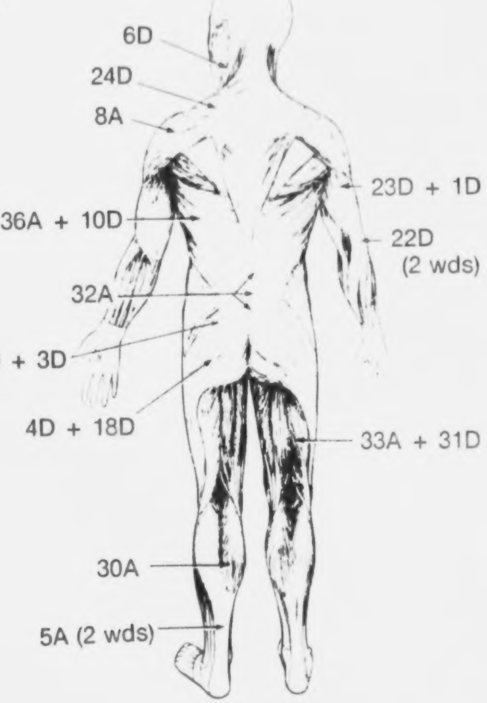
ASSIGNMENT SHEET #1 — COMPLETE A SKELETAL MUSCLE CROSSWORD PUZZLE

NAME ______________________________ SCORE ________________

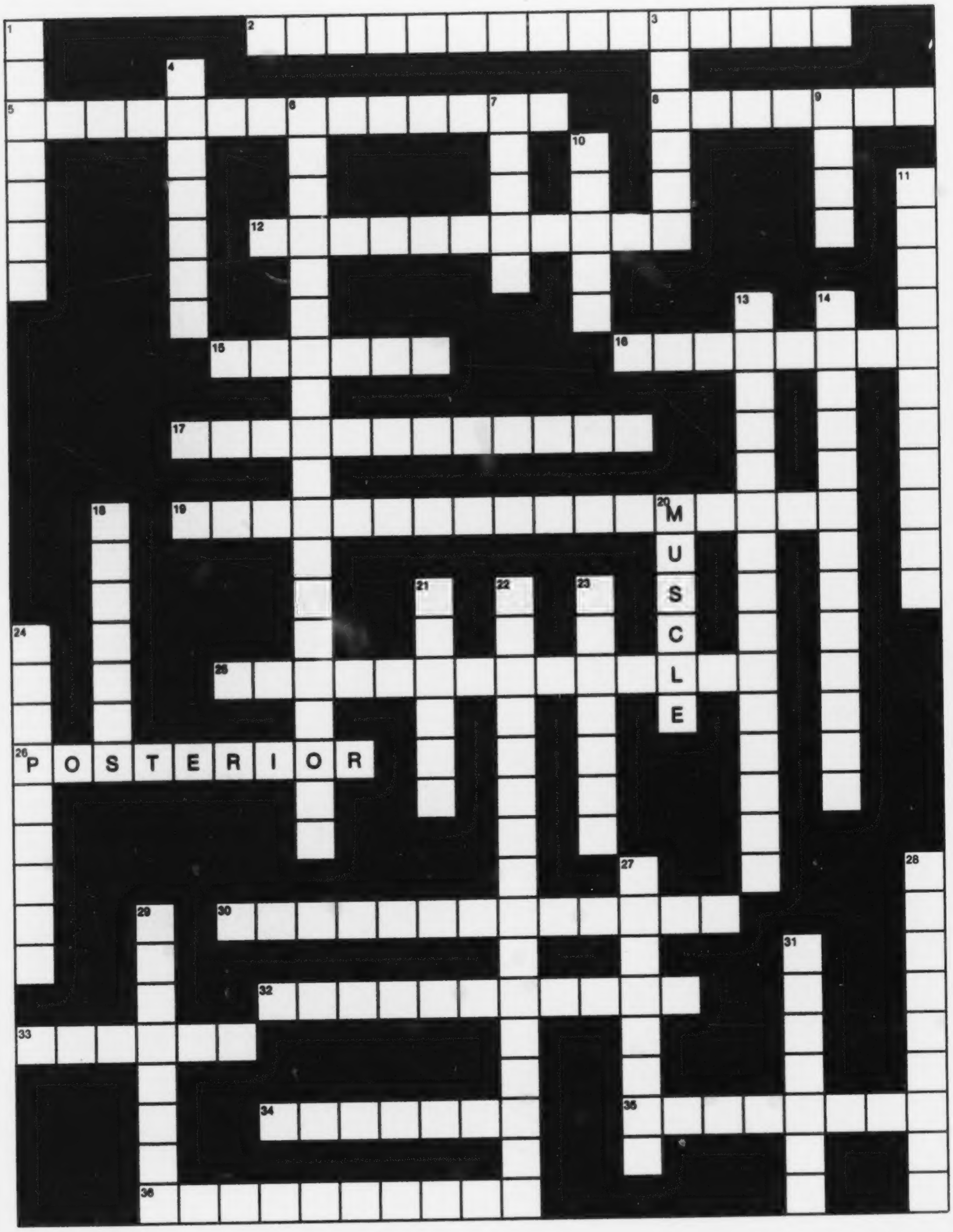
Having trouble remembering the names of the principal skeletal muscles? Review Information Sheet, Section V, and then complete the crossword puzzle on the next page for practice.

Fill in the puzzle squares with the names of the muscles illustrated below. The numbers on the illustrations correspond with those on the puzzle. "A" stands for *Across*, while "D" stands for *Down*.


12A + 9D
12A + 7D
8A
6D
13D (2 wds)
17A
14D (2 wds)
2A (2 wds)
29D + 34A
35A + 34A
19A
21D + 28D
15A + 31D
21D + 11D
25A (2 wds)
27D + 16A


6D
24D
8A
23D + 1D
36A + 10D
22D (2 wds)
32A
4D + 3D
4D + 18D
33A + 31D
30A
5A (2 wds)

ASSIGNMENT SHEET #1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P O S T E R I O R
M U S C L E

MUSCULAR SYSTEM
UNIT III

ASSIGNMENT SHEET #2 — PERFORM ACTIVE RANGE-OF-MOTION EXERCISES

NAME ______________________________ SCORE ______________

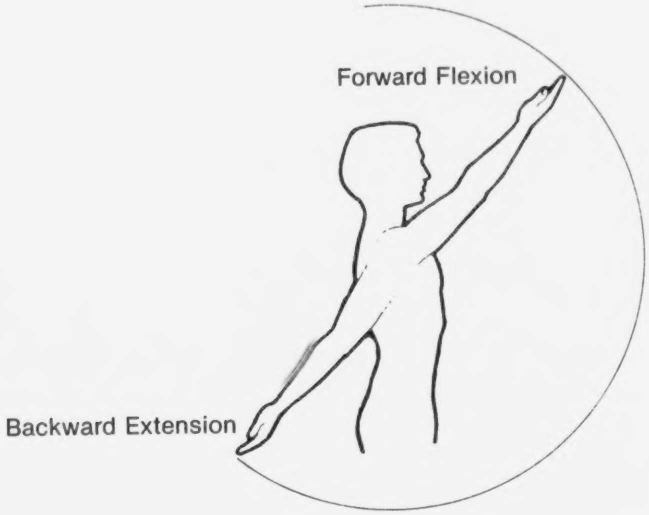
It is important that you keep yourself and your muscles fit. Regular, sensible exercise helps you remain limber and mobile, improves your posture, and increases your circulation. Assess your own mobility by performing the following range-of-motion exercises. If you find that you are stiff or that you lack range of motion in any area, work on regularly exercising that area to regain and retain full mobility.

Neck

- Bend head and neck forward until chin touches neck; lift head up and bend back; return to starting position (flexion and extension)
- Turn head to left and then to right (rotation)

Shoulders

- Lift arm forward over head and then return to side (flexion and extension)



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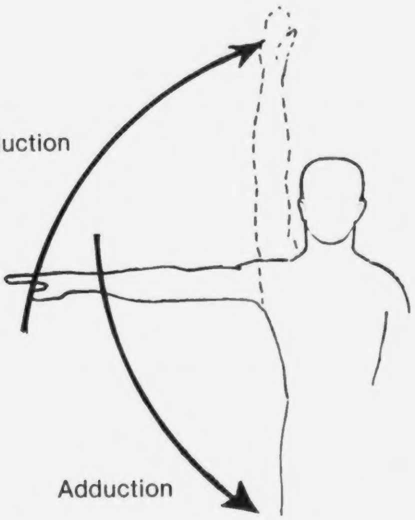
ASSIGNMENT SHEET #2

- Lift arm up and out to side until it is over head, and then return to side (abduction and adduction)



- Flex elbow, bring elbow up to level of shoulder, and reach the back of neck with fingers (external or outward rotation)
- Flex elbow, draw arm across chest, and touch other shoulder (internal or inward rotation)

Elbow

- Bend elbow to touch shoulder with fingertips; straighten elbow (flexion and extension)

Wrist

- Bend palm side of hand down toward arm; then back (flexion and extension)
- Bend wrist from side to side (rotation)

Fingers

- Bend fingers to make a fist; then straighten fingers (flexion and extension)
- Spread fingers fanwise; then bring together (abduction and adduction)
- Touch thumb into palm; then extend out straight (flexion and extension)
- Touch tips of each finger with thumb (opposition)

ASSIGNMENT SHEET #2

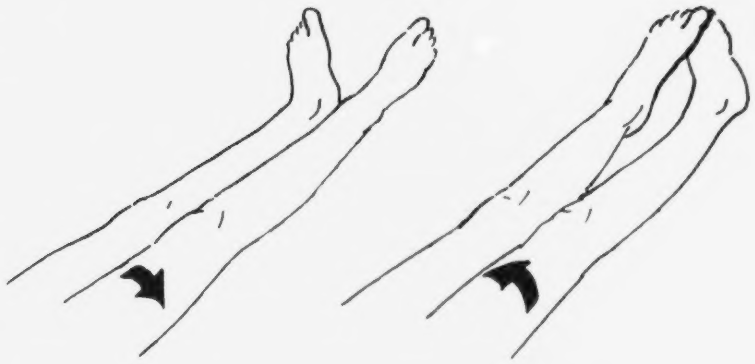
Trunk

- In dorsal recumbent position, slowly raise trunk to sitting position and then return (flexion and extension)
- In sitting position with hands behind head, bend to left and then to right (lateral flexion)
- In sitting position with hands behind head, rotate upper body to left and then to right (rotation)

Hip

(NOTE: Perform the following exercises for the lower extremities in a supine or recumbent position.)

- With legs straight and toes pointing up, move leg out to side and return (abduction and adduction)
- Keeping knees straight, turn legs so that toes point inward and then outward (internal and external rotation)



External Rotation

Internal Rotation

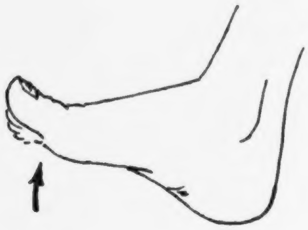
Knee and hip

- Bend knee, bringing it as close to chest as possible; return to starting position (flexion and extension)

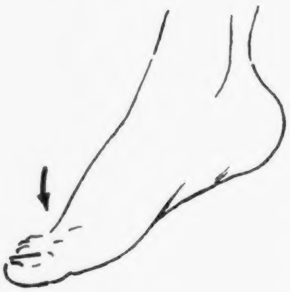
ASSIGNMENT SHEET #2

Ankle

- Bend foot up toward leg and down away from leg (dorsal and plantar flexion)



Dorsal Flexion



Plantar Flexion

- Move ankle in a circle (rotation)

MUSCULAR SYSTEM
UNIT III

ASSIGNMENT SHEET #3 — APPLY THE PRINCIPLES OF BODY MECHANICS

NAME ______________________________ SCORE ______________

The use of good body mechanics is very important to the health care worker. Correct methods of standing, sitting, bending, lifting, and reaching should be practiced and used daily, not only on the job but at home as well.

Read the following principles of body mechanics, and then practice applying these principles by performing the steps that follow. Have a classmate or your instructor evaluate your use of body mechanics.

Principles of Body Mechanics

A. Good balance and stability are obtained when base of support is broadened by standing with feet slightly apart

B. Good alignment of body parts (good posture) reduces strain and fatigue

C. Changing position and type of activity helps maintain muscle tone and lessen fatigue

D. Carrying weight close to the body uses less effort than carrying weight away from the body

(NOTE: Carrying weight away from body can cause muscle strain.)

E. Proper body alignment while sitting reduces strain and improves circulation in legs and feet

F. Pulling, sliding, or rolling an object uses less effort than lifting

G. Smooth, rhythmic movements at a moderate speed require the least energy

H. Tightening the abdominal muscles upward and the gluteal muscles downward before undertaking any activity decrease the likelihood of strain or injury

I. Facing toward the task to be performed and turning the entire body in one plane, rather than twisting, lessens the back's susceptibility to injury

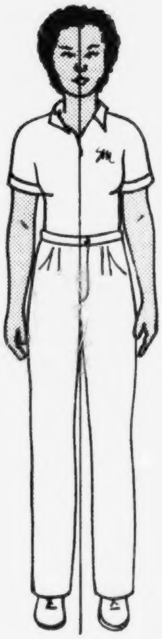
J. Lifting is better undertaken by bending the legs and using the larger leg muscles rather than by using the back muscles; always use the longest and strongest muscles

K. The weight of the body can be used to facilitate lifting and moving

L. Less energy is required to move an object when friction between the object and the surface on which it rests is minimized

ASSIGNMENT SHEET #3

Body Mechanics for Standing



A. Stand erect with arms close to sides and hanging straight down

B. Hold head erect, shoulders back, and chest slightly out

C. Pull up buttocks and hold in abdomen

D. Make sure knees are slightly flexed

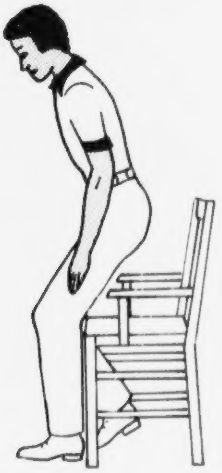
E. Point feet forward and stand with feet slightly apart, giving a broad base of support

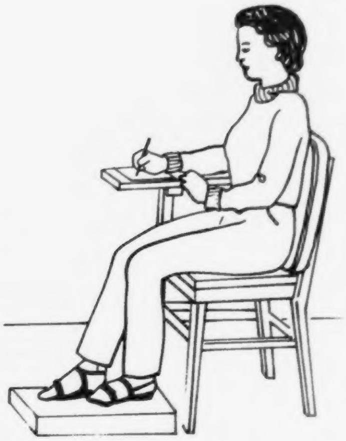
F. Practice standing correctly to learn correct body mechanics

(NOTE: The body should be relaxed in this position, and the body can stand like this for long periods of time without fatigue.)

ASSIGNMENT SHEET #3

Body Mechanics for Sitting





A. Stand close to chair and place a foot under it to broaden base of support

B. Lower body and shift weight of trunk toward the back

C. Hold vertebrae as straight as possible

D. Rest feet flat on floor

(NOTE: Crossing the legs will hamper circulation and may cause problems in lower legs and feet.)

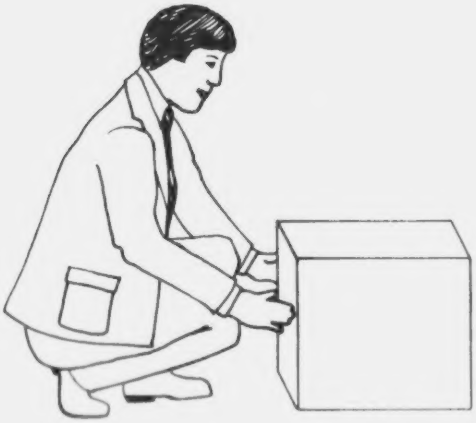
E. Sit with one foot forward to add stability when moving toward a desk or object in front of you

(NOTE: The chair should be high or low enough so that feet can rest flat on the floor, and the seat should be deep enough to allow you to sit with your back firmly against the backrest.)

F. Practice sitting in various chairs to learn the correct body mechanics

ASSIGNMENT SHEET #3

Body Mechanics for Bending and Lifting



A. Place feet slightly apart to provide a wide base of support and to provide good balance

B. Keeping the spine in good alignment, bend knees and lower body toward floor near object to be lifted

C. Securely grasp object with both hands

(NOTE: Do not lift objects that are too heavy or that are not balanced well. It is better to lift several items or to get assistance than to risk injuring yourself.)

D. Keeping back straight, use leg muscles to lift object from floor to waist level

E. Hold object close to body while moving it to another location

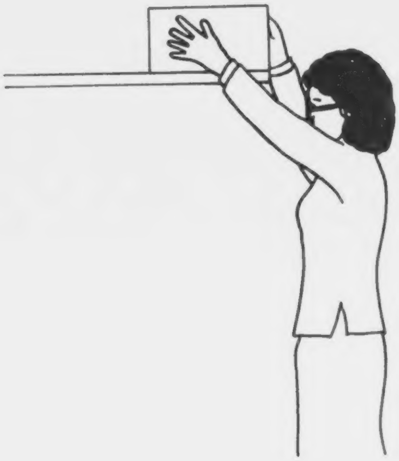
F. Set object down by bending knees and lowering body toward floor, remembering to keep back straight

(NOTE: Do not lean outward and over to set an object down as this puts too much strain on your back and arm muscles and disrupts your center of balance.)

G. Practice lifting several heavy objects from the floor to learn the correct body mechanics

ASSIGNMENT SHEET #3

Body Mechanics for Reaching



A. Stand close enough to object to keep a good, solid base of support

B. Place feet slightly apart so that you may pivot your body with arms extended to reach object

C. Try to keep back in good alignment while reaching

D. Make sure that you maintain good balance and grasp the object firmly

E. Use upper arm muscles to bring the object down to your level

F. Practice reaching for objects at various levels to learn correct body mechanics

NERVOUS SYSTEM
UNIT IV

UNIT OBJECTIVE

After completing this unit, the student should be able to describe the structure and function of the nervous system and organs of special senses. The student will show this ability by completing the assignment sheets and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match to their correct definitions terms associated with the nervous system.
2. List the basic functions of the nervous system.
3. Distinguish among the main divisions of the nervous system.
4. Identify major parts of the brain.
5. List the functions of the cerebral cortex.
6. Select correct functions of the different parts of the brain.
7. Describe the protection of the central nervous sytem.
8. Match cranial nerves to their correct functions.
9. Identify components of the spinal cord.
10. Identify the names and locations of the spinal nerves.
11. Describe the parts of the sensory system.
12. Match the five major special senses to their correct organs.
13. Identify the parts of the eye.
14. Name accessory structures of the eye.
15. Select correct functions of the eye parts and accessory structures.
16. Identify the parts of the ear.
17. State functions of the parts of the ear.
18. Select correct statements about the senses.
19. Describe education and duties of health occupations related to the nervous system and the special senses.

NERVOUS SYSTEM
UNIT IV

INFORMATION SHEET

I. Terms and definitions

A. *Cerumen* — Waxlike, soft brown secretion found in external ear canal; lubricates and protects external canal and eardrum

B. *Ganglion* (plural, *ganglia*) — Mass of nerve tissue—primarily nerve cell bodies—outside central nervous system

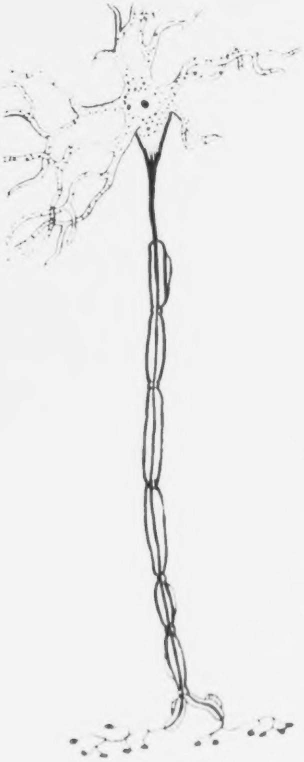
C. *Gustatory* — Pertaining to the sense of taste

D. *Nerve* — Bundle of fibers, blood vessels, and connective tissue outside the central nervous system (Figure 1)

(NOTE: Nerve cells are called *neurons*. Structurally, neurons are the most complex cells of the body.)

EXAMPLE: Motor nerve

FIGURE 1



INFORMATION SHEET

E. *Nervous system* — Brain, spinal cord, and nerves that work together to coordinate body activities

F. *Neurology* — Study of the nervous system and its diseases

G. *Olfactory* — Pertaining to sense of smell

H. *Ophthalmology* — Study of the eye and its diseases

I. *Orbit* — Eye socket

(NOTE: The orbit is lined with a layer of fatty tissue and acts as protection for the eye.)

J. *Otology* — Study of the ear and its diseases

K. *Special senses* — Sensations such as taste, smell, touch, hunger, thirst, position, and balance perceived by the body

L. *Stimulus* (plural, *stimuli*) — Anything that produces a response or increase in activity in living matter

M. *Ventricle* — Small brain cavity

II. Functions of the nervous system

A. Reception — Receives internal and external stimuli through sensory organs

B. Transmittal — Transmits stimuli to and from brain, which interprets, stores, and coordinates information received

C. Response — Responds to internal and external stimuli through motor organs

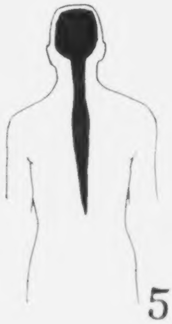
(NOTE: The nervous system is the master communication system of the body. It is responsible for the coordination of all body activities. The nervous system makes all conscious experiences possible.)

III. Divisions of the nervous system

A. Central nervous system (CNS) (See Figure 2)

1. Brain
2. Spinal cord

FIGURE 2



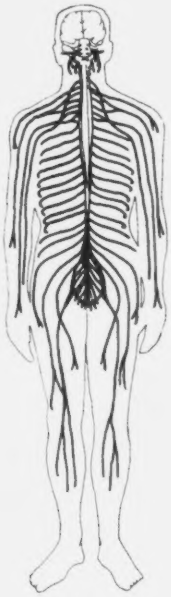
INFORMATION SHEET

B. Peripheral nervous system (PNS) (Figure 3)

1. Cranial nerves, twelve pairs that carry impulses to and from brain

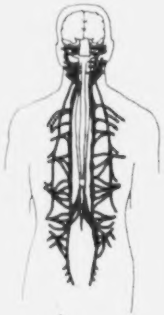
2. Spinal nerves, thirty-one pairs that carry messages to and from spinal cord

FIGURE 3



C. Autonomic nervous system (ANS) — Ganglia and fibers that lie on either side of spinal cord and automatically regulate action of glands, smooth muscles of hollow organs, and heart (Figure 4)

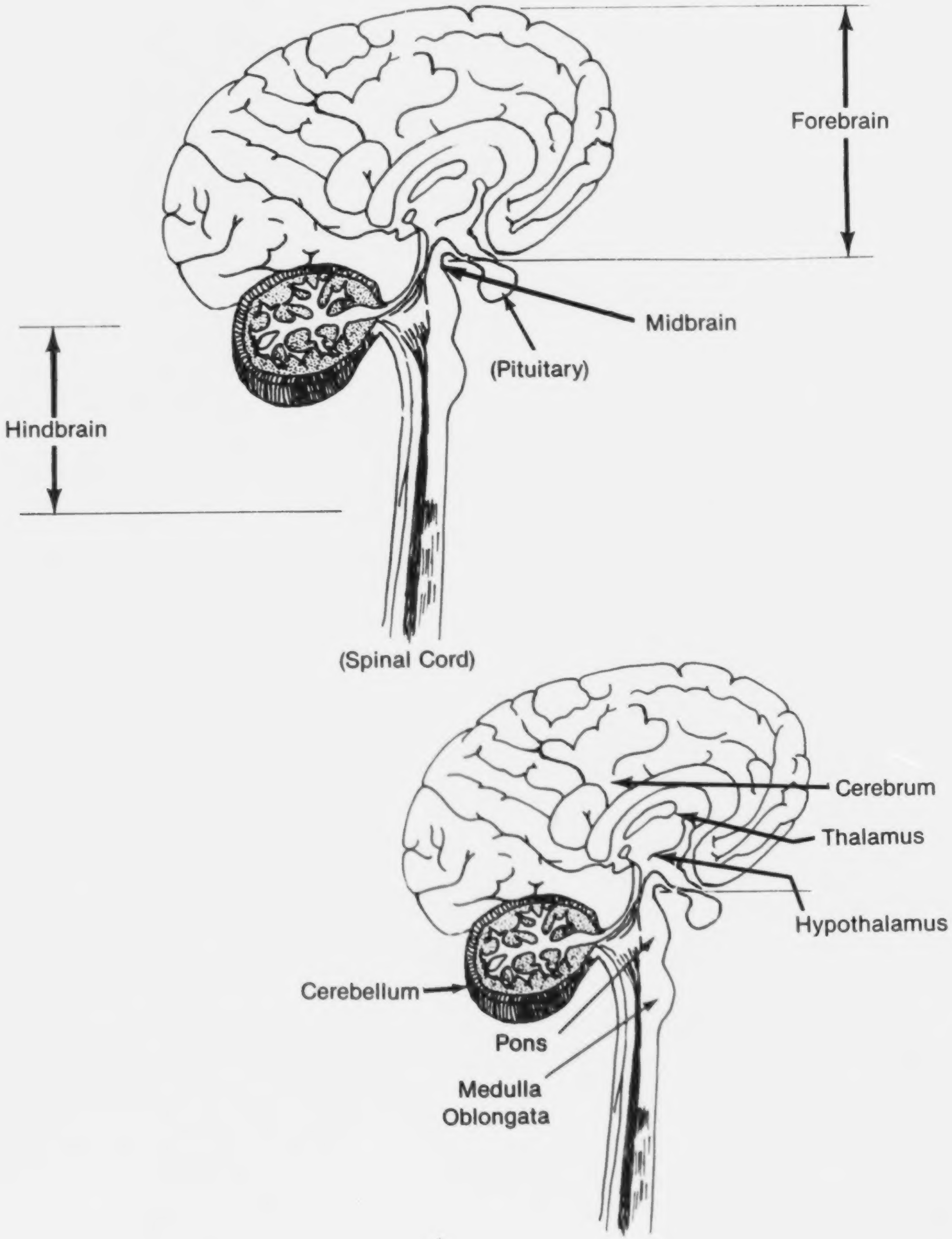
FIGURE 4



INFORMATION SHEET

IV. Main parts of the brain (Figure 5)

FIGURE 5


Forebrain
Midbrain
(Pituitary)
Hindbrain
(Spinal Cord)
Cerebrum
Thalamus
Hypothalamus
Cerebellum
Pons
Medulla
Oblongata

INFORMATION SHEET

V. Functions of the cerebral cortex

(NOTE: The surface of the cerebrum, the cerebral cortex, is a thin layer of gray matter consisting of dendrites, neurons, and cell bodies.)

A. Motor area — Controls movement of muscles

B. Sensory area — Receives impulses of heat, cold, pain, and pressure

C. Association area — Controls higher mental functions such as memory, thought, judgment, and learning

VI. Functions of the different parts of the brain

(NOTE: The left side of the brain controls the right side of the body, and the right side of the brain controls the left side of the body because sensory and motor nerve pathways cross over in the brain stem.)

A. Forebrain

1. Frontal lobe of cerebrum — Controls voluntary muscles and judgment

2. Parietal lobe of cerebrum — Controls sensory functions such as pain, touch, and temperature interpretation

3. Temporal lobe of cerebrum — Controls hearing, smell, and taste

4. Occipital lobe of cerebrum — Controls vision

5. Thalamus — Serves as a relay center and monitors sensory stimuli

6. Hypothalamus — Controls body temperature, water balance, sleep, appetite, some emotions such as fear and pleasure, and the autonomic nervous system

B. Midbrain — Serves as a reflex center

C. Hindbrain

1. Pons — Relays impulses between cerebrum and cerebellum, and between cerebrum and medulla oblongata

2. Medulla oblongata — Controls vital functions such as breathing, heart rate, blood pressure, swallowing, and coughing

   (NOTE: The medulla oblongata is considered to be the most important part of the brain.)

3. Cerebellum — Maintains body balance, equilibrium, coordination, and muscle tone

INFORMATION SHEET

VII. Protection of the central nervous system

(NOTE: Fluid, membrane, and bones are all used to protect delicate nervous tissue.)

A. Cerebrospinal fluid fills ventricles of brain and subarachnoid spaces of brain and spinal cord, cushioning them against injury

B. Cranial bones encase the brain

C. Vertebrae encase the spinal cord

D. Meninges (tough membranes) cover brain and spinal cord

VIII. Names and functions of the cranial nerves

A. **Olfactory** (I) — Acts as pathway for sense of smell

B. **Optic** (II) — Acts as pathway for sense of sight

C. **Oculomotor** (III) — Controls part of eyeball muscles

D. **Trochlear** (IV) — Controls one eyeball muscle

E. **Trigeminal** (V) — Supplies motor, sensory, and intermediate sensations via three branches to cornea and conjunctiva, upper portion of face, ear, lower lip, teeth, gums, and muscles for chewing

F. **Abducens** (VI) — Controls lateral eye movement

G. **Facial** (VII) — Controls facial muscles, transmits impulses from middle ear, and acts as pathway for sense of taste

H. **Auditory** (VIII) — Acts as pathway for sense of hearing and sense of balance

I. **Glossopharyngeal** (IX) — Controls swallowing and acts as pathway for sense of taste

J. **Vagus** (X) — Controls swallowing, hunger, speech muscles, breathing, heart rate, peristalsis, and glands in stomach and pancreas

K. **Spinal accessory** (XI) — Controls muscles of neck and upper back

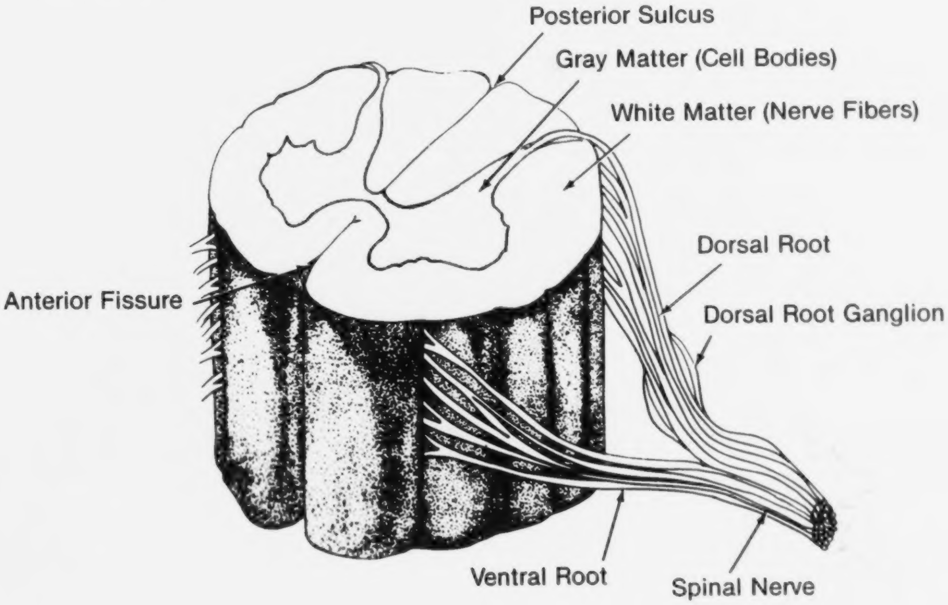
L. **Hypoglossal** (XII) — Controls tongue muscles

INFORMATION SHEET

IX. Components of the spinal cord (Figure 6)

(NOTE: The spinal cord lies within the spinal canal surrounded and protected by vertebrae. It is a small cord about 18 inches long in the adult, and acts as a great conduction pathway of impulses between the peripheral nerves to and from the brain. Spinal nerves emerge from the cord by two short roots, the dorsal root [sensory] and the ventral root [motor].)

FIGURE 6

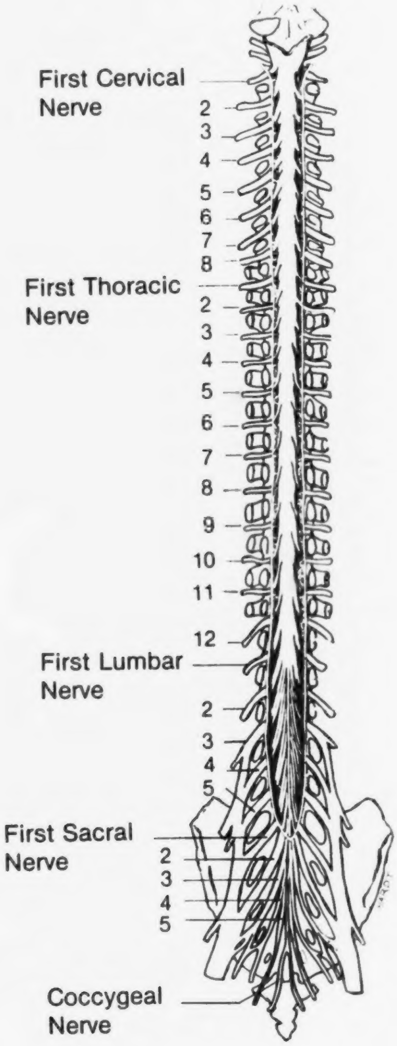

Posterior Sulcus
Gray Matter (Cell Bodies)
White Matter (Nerve Fibers)
Dorsal Root
Dorsal Root Ganglion
Anterior Fissure
Ventral Root
Spinal Nerve

INFORMATION SHEET

X. Names and locations of spinal nerves (Figure 7)

(NOTE: The spinal nerves are named according to the segment of the spinal cord to which they are attached. There are 31 pairs of spinal nerves.)

FIGURE 7


First Cervical Nerve
2
3
4
5
6
7
8
First Thoracic Nerve
2
3
4
5
6
7
8
9
10
11
12
First Lumbar Nerve
2
3
4
5
First Sacral Nerve
2
3
4
5
Coccygeal Nerve

Chaffee EE, Greisheimer EM: *Basic Physiology and Anatomy*, 4th ed. Philadelphia, JB Lippincott, 1979. Used with permission.

INFORMATION SHEET

XI. Descriptions of parts of the sensory system

A. Receptor — Specialized nerve ending that receives a stimulus

EXAMPLES: Stimuli such as light, sound, odors, chemical substances

(NOTE: There are millions of receptors in the human body. Stimulation of some receptors leads to the sensation of cold; stimulation of others gives the impression of heat; and stimulation of still others may give the sensation of touch, pressure, or pain.)

B. Sensory nerve — Pathway that carries impulses (messages) from receptor to brain

C. Sensory center — Area of brain that interprets impulses as senses (sensations)

XII. Special senses and their organs

A. Visual sense — Eye

B. Hearing sense — Ear

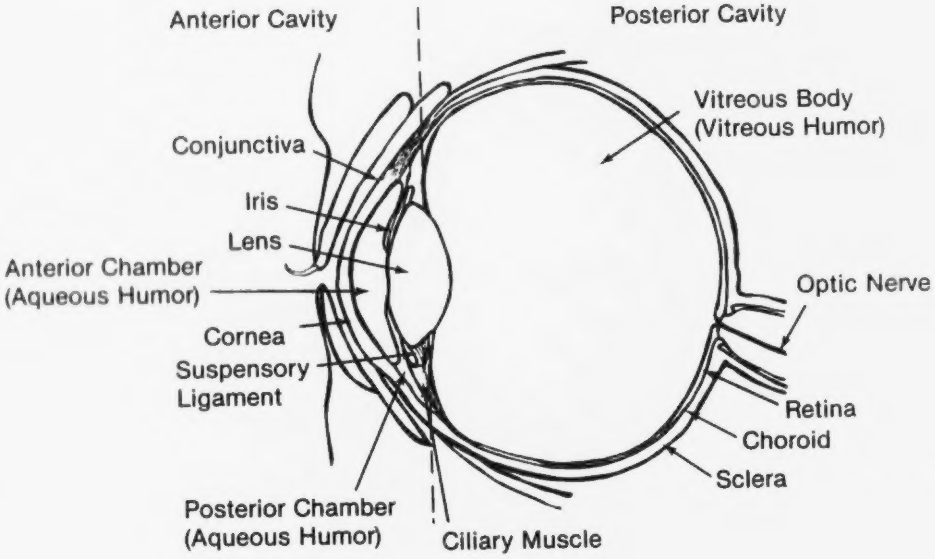
C. Smell sense — Nose

D. Taste sense — Tongue

E. Touch sense — Skin and internal organs

XIII. Parts of the eye (Figure 8)

FIGURE 8


Anterior Cavity
Posterior Cavity
Vitreous Body
(Vitreous Humor)
Conjunctiva
Iris
Lens
Anterior Chamber
(Aqueous Humor)
Optic Nerve
Cornea
Suspensory
Ligament
Retina
Choroid
Sclera
Posterior Chamber
(Aqueous Humor)
Ciliary Muscle

INFORMATION SHEET

XIV. Accessory structures of the eye

(NOTE: Accessory structures are those that have a subordinate function to a more important structure.)

A. Eyebrows and eyelashes

B. Eyelids (palpebrae)

C. Lacrimal glands and ducts

XV. Functions of the eye components and accessory structures

A. **Conjunctiva** — Component that covers front of eyeball, lines eyelid, and aids in keeping eye moist

B. **Choroid** — Middle vascular layer on lateral and posterior eyeball; supplies oxygen and nutrients

C. **Iris** — Circular muscle that regulates amount of light entering pupil; the pigmented or colored part of eye

D. **Pupil** — Opening in iris that permits light to enter

E. **Ciliary muscle** — Component that controls shape of lens to make a sharp, clear image

F. **Sclera** — Tough, white, fibrous protective layer covering eyeball

G. **Cornea** — Clear, transparent part of sclera on front of eyeball that allows light to enter pupil

H. **Lens** — Circular, jellylike suspension that focuses images on retina

I. **Suspensory or ciliary ligament** — Component that holds lens in place

J. **Anterior chamber** — Space between cornea and iris that holds aqueous humor

K. **Posterior chamber** — Space behind lens that holds vitreous humor

L. **Vitreous humor** — Jellylike substance that maintains shape of eyeball

M. **Aqueous humor** — Watery, transparent fluid that helps keep the shape and position of the cornea

N. **Retina** — Inner layer of nerve tissue containing tiny receptors (rods and cones) for vision

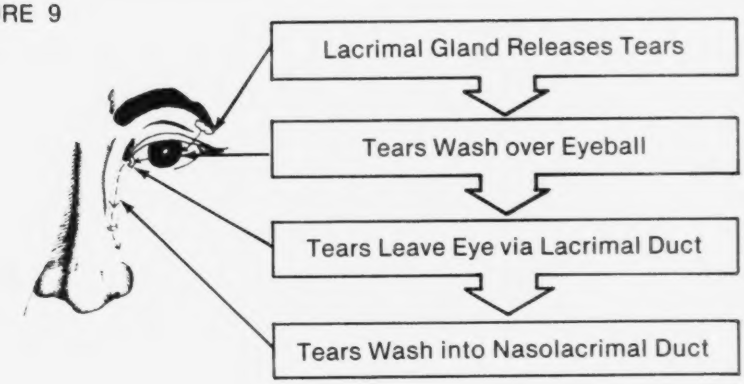
(NOTE: The retina is often called the "camera" of the eye.)

O. **Optic nerve** — Pathway that conducts visual impulses from retina to brain

INFORMATION SHEET

P. **Lacrimal gland** — Structure that secretes tears to moisten and cleanse eye and destroy some bacteria (Figure 9)

FIGURE 9


Lacrimal Gland Releases Tears
Tears Wash over Eyeball
Tears Leave Eye via Lacrimal Duct
Tears Wash into Nasolacrimal Duct

Q. **Lacrimal duct** — Structure that carries tears from eye to nasal cavity (See Figure 9)

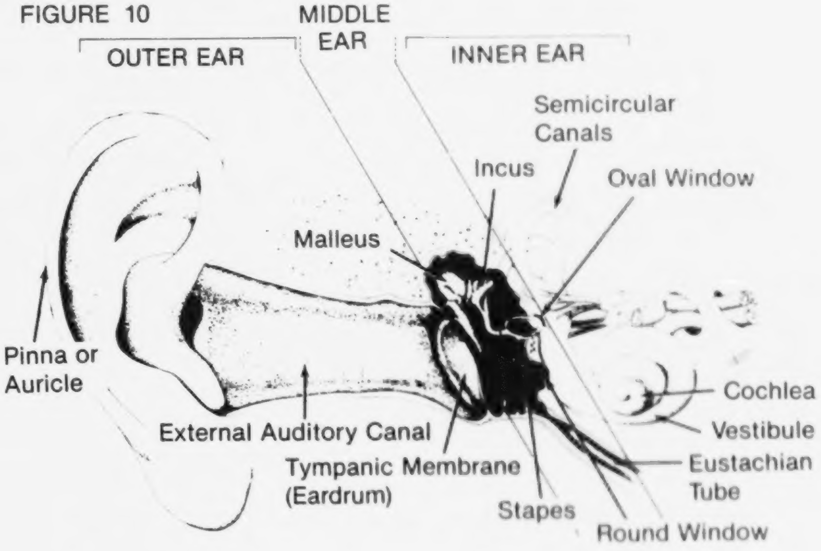
R. **Eyelid muscle** — Levator that opens and closes eyelid

S. **Oculomotor nerve** — Component that controls part of eye muscles

T. **Ophthalmic nerve** — Component that carries impulses of pain, touch, and temperature from eye and surrounding parts to brain

XVI. Parts of the ear (Figure 10)

FIGURE 10


MIDDLE EAR
OUTER EAR
INNER EAR
Semicircular Canals
Incus
Oval Window
Malleus
Pinna or Auricle
Cochlea
Vestibule
External Auditory Canal
Tympanic Membrane (Eardrum)
Eustachian Tube
Stapes
Round Window

INFORMATION SHEET

XVII. Functions of components of the ear

A. Outer ear

1. Pinna or auricle — Catches air vibrations or sounds
2. External auditory canal — Guides air vibrations to tympanic membrane
3. Tympanic membrane (eardrum) — Protects middle ear and vibrates when sounds strike it

B. Middle ear

1. Ossicles (malleus, incus, stapes) — Bony chain that conducts sound waves from eardrum to oval window

   (NOTE: The malleus, incus, and stapes are sometimes called the *hammer, anvil,* and *stirrup*, based on their shapes.)

2. Oval window — Opening that leads from middle ear to vestibule of inner ear; houses stapes
3. Round window — Opening in middle ear covered by secondary tympanic membrane; aids in transmitting sound waves from ossicles to inner ear
4. Eustachian tube — Regulate pressure in middle ear to equal that outside the eardrum

C. Inner ear

1. Cochlea — Contains fluid and organ of Corti (receptors for hearing)
2. Vestibule — Space that controls sense of position
3. Semicircular canals — Fluid-filled passages that control equilibrium

XVIII. Senses of smell, taste, and touch

A. Sense of smell

1. This sense is also called the *olfactory* sense
2. Receptors for smell are located in olfactory epithelium in upper part of nasal cavity
3. Olfactory nerve carries smell impulses to brain
4. Sense of smell is closely related to sense of taste
5. Olfactory nerves tire quickly and become less sensitive after detecting the same odor for a period of time

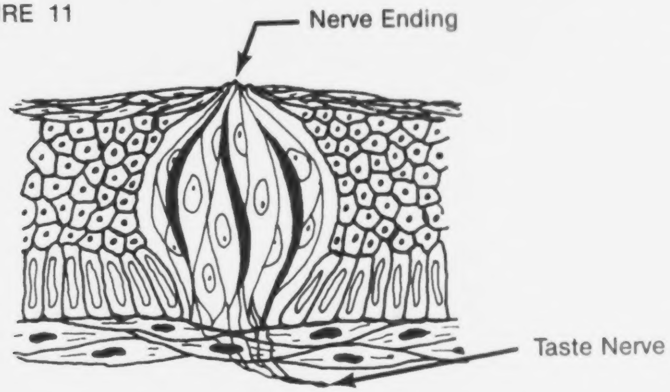
INFORMATION SHEET

B. Sense of taste

1. This sense is also called the *gustatory* sense

2. Receptors for taste (taste buds) are located in the papillae (elevations of the mucous membrane) of the tongue (Figure 11)

FIGURE 11



3. Sense of taste is limited to four basic taste sensations, each received at a separate location on the tongue

   a. Salty — Near tip of tongue

   b. Sweet — Near tip of tongue

   c. Sour — Along sides of tongue

   d. Bitter — At back of tongue

C. Sense of touch

1. Touch is sensed by receptors of sensory dendrites located in skin

2. Pain receptors are located in the skin and viscera; they give warning of potentially harmful environmental changes

3. Pain receptors are classified according to location

   a. Somatic pain — From peripheral nervous system

   b. Visceral pain — From internal organs

   c. Referred pain — From deep structures or viscera, never from skin

   (NOTE: The cerebrum does not always interpret the location of pain accurately. Sometimes it refers pain to a surface area instead of the region from which it came. This is known as *referred pain*.)

INFORMATION SHEET

XIX. Health occupations related to the nervous system and special senses (Table 1)

TABLE 1

Occupation	Education	Duties
Audiologist	Four-year baccalaureate program with 60 semester hours in normal and disordered communication and clinical procedures for assessment and treatment of disorders, of which 30 hours must be at graduate level; 300 clock hours of supervised clinical experience; certification or licensure	Evaluates hearing function and performs research related to hearing; plans, directs, and conducts programs developed to improve the communication abilities of people with impaired hearing
Electroencephalographic (EEG) technologist	Until recently EEG technologists were trained on the job; now programs are academically based and are 1 or 2 years long; EEG technicians who have had 1 year of training, 1 year of laboratory experience, and who have completed a written and oral exam, are designated Registered EEG Technologist (REEGT)	Measures the electrical activity of the brain; interviews patient, measures and marks head, applies electrodes; runs test; prepares tracing for neurologist to interpret
Neurologist	Four years of post-medical school experience; once training is completed, candidate can qualify to be certified in neurology	Diagnoses and recommends treatment for diseases and disorders of the nervous system and its structures
Neurosurgeon	After completion of medical school, the trainee takes three to seven or eight years of additional training to become a specialist in one of the surgical fields; the American Board of Surgery and the American College of Surgeons have extensive testing (oral, written, and clinical) and performance standards that can result in a surgeon's becoming board certified or a fellow of the American College of Surgeons (FACS)	Treats diseases and disorders of the brain, spinal cord, and peripheral and sympathetic nervous system

INFORMATION SHEET

Occupation	Education	Duties
Ophthalmic dispenser	Completion of 4½- to 21-month ophthalmic dispensing program at community college or technical institute; 19 states require licensing with exams held twice a year	Interprets prescriptions, responsible for grinding and compounding lenses to specifications of the prescription; selects frames; measures, adapts, fits, and adjusts eyeglasses; may dispense and fit contact lenses
Ophthalmic medical assistant	*Ophthalmic assistant B* Completion of short course (1 year or less) or its equivalent and work 1 year or more under sponsoring ophthalmologist; written exam over selected skill areas for certification *Ophthalmic assistant A* Same initial course work as for assistant B, but must be certified in *all* skill areas *Ophthalmic technician* Education and training with an accredited program; written exam and written and practical tests; for certification, all assistant A criteria plus advanced technical procedures *Ophthalmic technologist* Completes education and training in accredited 4-year baccalaureate program in health sciences; endorsement by supervising and sponsoring ophthalmologist and director of program; written and practical tests for certification	Taking medical history, administering diagnostic tests, making anatomical and ocular measurements, testing ocular functions, administering topical medications, care of medical equipment, assisting in surgery, assisting in the fitting of contact lenses and eyeglasses, performing clinical photography, refractometry, echography, and microbiological tests
Ophthamologist	Four years of medical school followed by one year internship before the 3 years of training in an ophthalmology residency; must be board certified by AMA Division of Ophthamology, must pass national exams to be registered and licensed	Evaluating and treating diseases and abnormalities of the eye by eyeglasses, medicines, and surgery

INFORMATION SHEET

Occupation	Education	Duties
Optometrist	Four-year professional degree program preceded by at least 2 years of preoptometric study at an accredited institution; must be licensed, which requires a Doctor of Optometry degree and passing state board examination	Examines eyes and related structures to determine the presence of vision problems, eye diseases, or other abnormalities; prescribes and adapts lenses or other optical aids; uses vision training to preserve, restore, or enhance vision efficiency
Orthoptist (deals with crossed eyes and problems of eye coordination)	Twenty-four month training period at preceptorship or training center accredited by American Orthoptic Council; no licensure is required, but all orthoptists are required to take certifying examinations at the end of the training period Ordinarily fewer than 50 orthoptists are trained nationally per year. This number barely replaces those who retire, so graduates are quickly placed	Works under qualified ophthalmologist, using various tests and techniques for evaluating how well both eyes work together and recommending orthoptic exercises when needed
Otolaryngologist	Graduation from medical school and a minimum of 1 year surgical training; must be board certified; physicians entering this field take courses in head and neck anatomy and in neurophysiology of hearing and other special senses (except for eyes and brain); they take rotations in plastic surgery, thoracic surgery, and neurosurgery	Specialize in medically and surgically treating diseases of the head, neck, and special sense organs (other than the brain and eye); may work with cancer of the head or neck and with facial trauma; perform approximately half the cosmetic surgery of the head and neck
Speech-language pathologist	Same as for audiologist	Plans, directs, and conducts programs designed to restore or improve communication ability of patients with language or speech impairments; conducts research related to speech and language problems

NERVOUS SYSTEM
UNIT IV

ASSIGNMENT SHEET #1 — IDENTIFY THE PARTS OF THE BRAIN

NAME ________________________________ SCORE ______________

Use this assignment sheet to refresh your memory and to help you review for the unit test.

Label the parts of the brain illustrated below. Write your answers in the blanks provided.

A. ______________________

B. ______________________

C. ______________________

D. ______________________

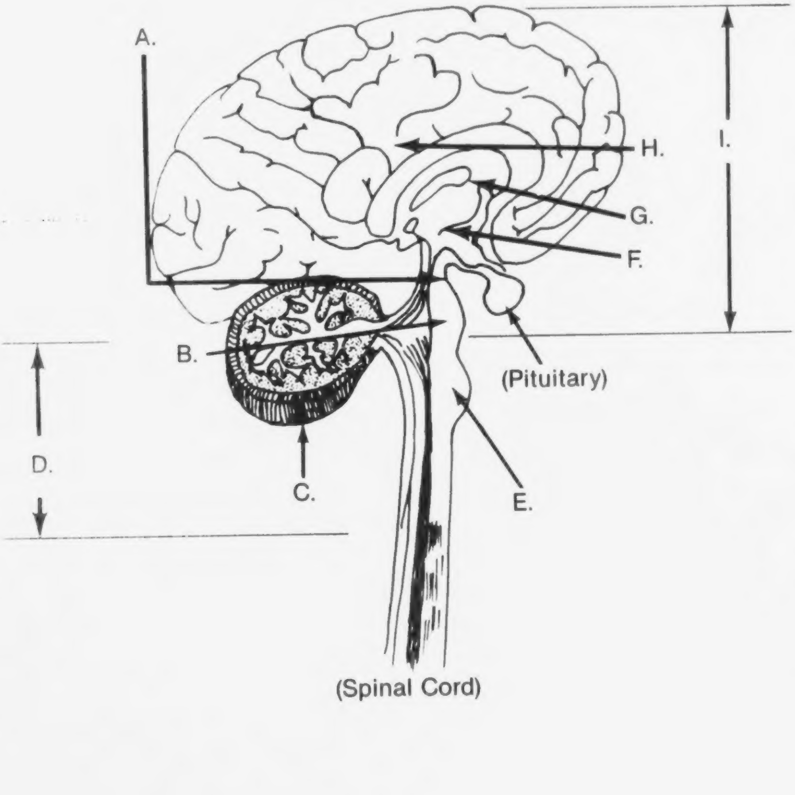
E. ______________________

F. ______________________

G. ______________________

H. ______________________

I. ______________________


A.
H.
I.
G.
F.
B.
(Pituitary)
D.
C.
E.
(Spinal Cord)

NERVOUS SYSTEM
UNIT IV

ASSIGNMENT SHEET #2 — SELECT CORRECT STATEMENTS ABOUT THE NERVOUS SYSTEM

NAME ______________________________ SCORE ____________

Test your knowledge of the nervous system by completing this assignment sheet.

Select the correct word or phrase to complete the following statements. Write the correct numbers in the blanks. Perfect score is 100 points; each correct answer counts 4 points.

_____A. The functioning unit of the nervous system is the

1. Axon
2. Myelin sheath
3. Nerve
4. Neuron

_____B. The respiratory center is located in the

1. Cerebellum
2. Cerebrum
3. Hypothalamus
4. Medulla oblongata

_____C. Many vital reflexes have their center in the

1. Cerebellum
2. Cerebrum
3. Medulla oblongata
4. Pons

_____D. The part of the brain that serves as the reflex center for muscle coordination and equilibrium is the

1. Cerebellum
2. Cerebrum
3. Medulla oblongata
4. Pons

_____E. Messages of touch and smell are carried to the brain by the nerves classified as

1. Cranial
2. Motor
3. Peripheral
4. Sensory

ASSIGNMENT SHEET #2

_____F. The function of the cerebrospinal fluid that would be described as protective is the one that provides for

1. A source of food to the brain
2. Cushioning the brain and spinal cord against injury
3. Equalizing the pressure on the brain
4. Getting rid of the products of brain metabolism

_____G. The central nervous system is made up of the

1. Brain and cranial nerves
2. Brain and spinal cord
3. Cranial nerves and spinal nerves
4. Spinal cord and spinal nerves

_____H. The cerebrum is

1. Below the midbrain
2. Connected to the spinal cord
3. The gray part of the brain
4. The largest part of the brain

_____I. A function of the hypothalamus is to

1. Control body temperature, some emotions, and the autonomic nervous system
2. Control hearing, smell, and taste
3. Control vision
4. Control voluntary muscles and judgments

_____J. Thinking and making decisions are done in the part of the brain called the

1. Cerebellum
2. Cerebrum
3. Ganglion
4. Medulla

_____K. The meninges are

1. Membranes in the brain
2. Nerve cells on the outer surface of the brain and spinal cord
3. The bony layers of tissue covering the spinal cord
4. Three layers of tissue that cover the brain and spinal cord

_____L. The pons

1. Is part of the conduction pathway between the spinal cord and the brain
2. Is the most vital reflex center
3. Receives auditory impulses
4. Regulates body temperature

ASSIGNMENT SHEET #2

_____M. One function of the spinal cord is to

1. Control balance
2. Conduct impulses from various nerves to the brain
3. Control the facial muscles
4. Control thinking

_____N. A ganglion may be defined as

1. A "bump"
2. A group of nerve cells outside the brain and spinal cord
3. Nerve endings
4. The interlacing of an axon and dendrite

_____O. There are _____________lobes of the cerebrum.

1. One
2. Three
3. Four
4. Five

_____P. Which of the following is correctly termed the *sensory integrating center*?

1. Cerebrum
2. Hypothalamus
3. Medulla
4. Thalamus

_____Q. There are _____________ pairs of spinal nerves.

1. Twelve
2. Twenty-one
3. Twenty-seven
4. Thirty-one

_____R. There are _____________ pairs of cranial nerves.

1. Twelve
2. Twenty-one
3. Twenty-four
4. Thirty-one

_____S. The center for sight is located in the

1. Frontal lobe
2. Occipital lobe
3. Parietal lobe
4. Temporal lobe

ASSIGNMENT SHEET #2

_____T. The deep groove that divides the cerebrum into halves is called the

1. Anterior sulcus
2. Fissure of Sylvius
3. Longitudinal fissure
4. Posterior sulcus

_____U. The hypoglossal nerve controls?

1. Lateral eye movement
2. One eyeball muscle
3. Swallowing
4. Tongue muscles

_____V. There are ____________ pairs of spinal nerves in the lumbar area of the spine

1. One
2. Five
3. Eight
4. Twelve

_____W. Specialized nerve endings that receive stimuli are called

1. Axons
2. Ganglions
3. Neurons
4. Receptors

_____X. Which of the following is *not* a cranial nerve?

1. Abducens
2. Olfactory
3. Sacrum
4. Spinal accessory

_____Y. CNS means

1. Central nervous system
2. Cerebrum neonatal symptoms
3. Choroid neuron system
4. Cornea nephritis syndrome

NERVOUS SYSTEM
UNIT IV

ASSIGNMENT SHEET #3 — IDENTIFY COMPONENTS OF THE SPINAL CORD

NAME ____________________ SCORE ____________

Use this assignment sheet to refresh your memory concerning the components of the spinal cord, or to help you review for the unit test.

Label the parts of the spinal cord illustrated below. Write the correct names in the blanks.

A. ____________________

B. ____________________

C. ____________________

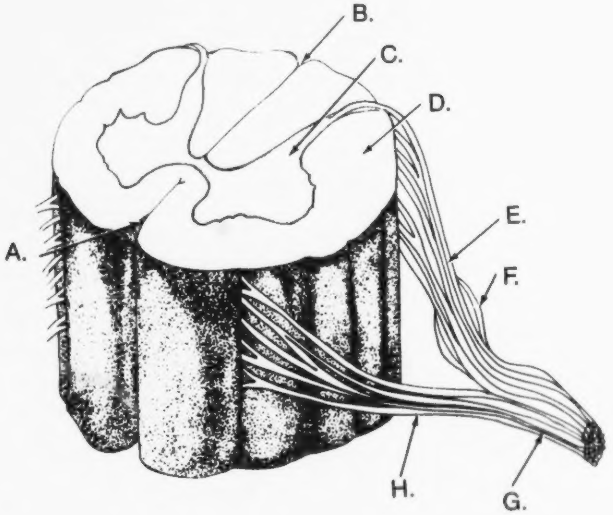
D. ____________________

E. ____________________

F. ____________________

G. ____________________

H. ____________________



NERVOUS SYSTEM
UNIT IV

ASSIGNMENT SHEET #4 — IDENTIFY THE PARTS OF THE EYE

NAME ______________________________ SCORE ______________

Use this assignment sheet to refresh your memory concerning the parts of the eye, or to help you review for the unit test.

Label the parts of the eye illustrated below. Write the correct names in the corresponding blanks.

A. ______________________

B. ______________________

C. ______________________

D. ______________________

E. ______________________

F. ______________________

G. ______________________

H. ______________________

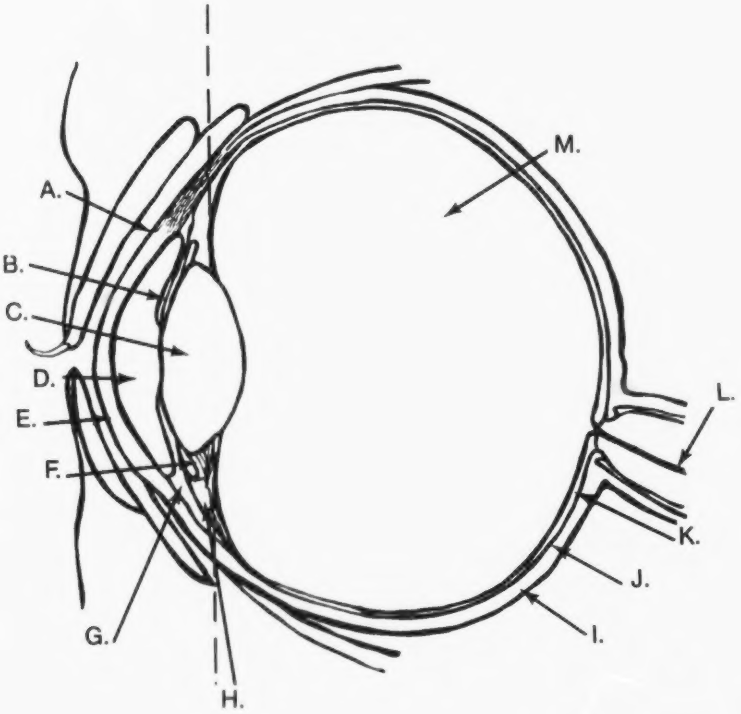
I. ______________________

J. ______________________

K. ______________________

L. ______________________

M. ______________________



NERVOUS SYSTEM
UNIT IV

ASSIGNMENT SHEET #5 — IDENTIFY THE PARTS OF THE EAR

NAME ____________________ SCORE __________

Use this assignment sheet to refresh your memory concerning the parts of the ear, or to help you review for the unit test.

Label the parts of the ear illustrated below. Write the correct names in the corresponding blanks.

A. ____________________

B. ____________________

C. ____________________

D. ____________________

E. ____________________

F. ____________________

G. ____________________

H. ____________________

I. ____________________

J. ____________________

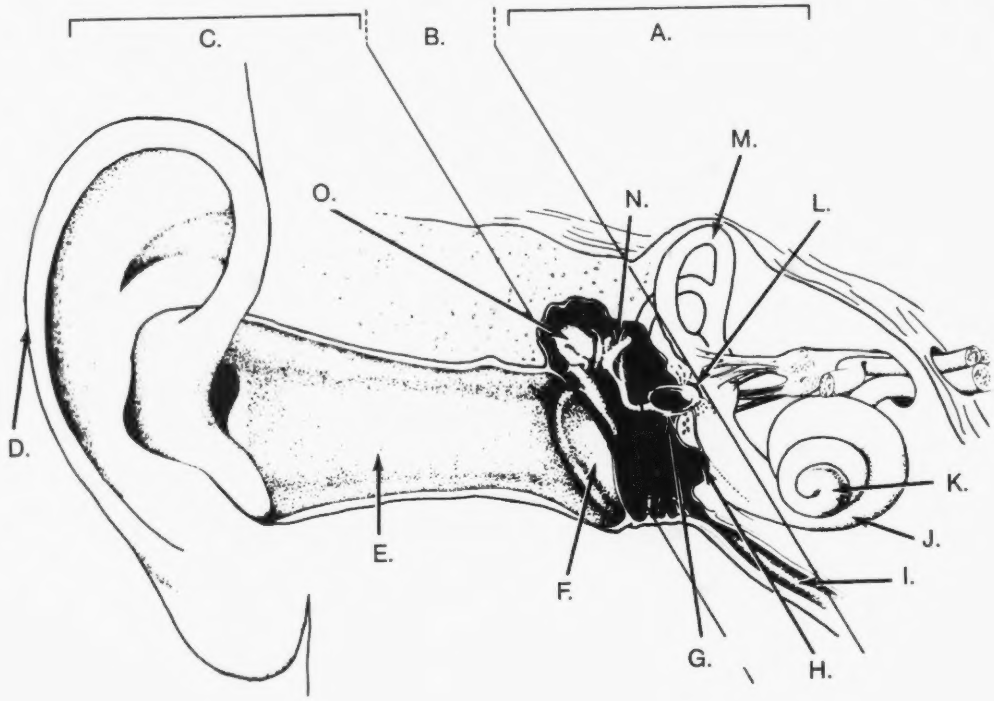
K. ____________________

L. ____________________

M. ____________________

N. ____________________

O. ____________________



NERVOUS SYSTEM
UNIT IV

ASSIGNMENT SHEET #6 — SELECT CORRECT STATEMENTS ABOUT THE SPECIAL SENSES

NAME ______________________________ SCORE ______________

Test your knowledge of the nervous system by completing this assignment sheet.

Select the correct word or phrase to complete the following statements. Write the correct numbers in the blanks. Perfect score is 100 points; each correct answer counts 4 points.

_____A. The structure that brings air into the middle ear, equalizing pressure on both sides of the eardrum, is called

1. Auditory meatus
2. Eustachian tube
3. External auditory canal
4. Mastoid process

_____B. The outermost layer of the eye, commonly called the *white of the eye*, is the

1. Choroid
2. Cornea
3. Retina
4. Sclera

_____C. Tears are produced by which of the following glands?

1. Cowpers glands
2. Lacrimal glands
3. Optic glands
4. Skenes glands

_____D. An inflammation of the conjunctiva involves the

1. Circular muscle around the pupil
2. Glands that produce tears
3. Membrane covering the front of the eye
4. Optic nerve

_____E. The bones of the middle ear serve to amplify sound waves and transmit them to the

1. Eustachian tube
2. Oval window
3. Round window
4. Tympanic membrane

ASSIGNMENT SHEET #6

_____F. The purpose of the iris is to

1. Act as a lens
2. Add color to vision
3. Refract or bend light
4. Regulate amount of light entering eye

_____G. The innermost layer of the eyeball contains the organs for the sense of vision and is called the

1. Choroid coat
2. Cornea
3. Retina
4. Sclera

_____H. The colored pigmented part of the eye is the

1. Ciliary body
2. Iris
3. Lens
4. Pupil

_____I. The passageway or tube that connects the middle ear to the nasopharynx is the

1. Auditory canal
2. Esophagus
3. Eustachian tube
4. Oval tube

_____J. The sensory nerve that allows a person to hear is the

1. Abducens nerve
2. Acoustic nerve
3. Oculomotor nerve
4. Olfactory nerve

_____K. The external ear is sometimes known as the

1. Cochlea
2. Pinna
3. Utricle
4. Vestibule

_____L. The sensory cells for the sense of smell are called

1. Epithelial
2. Oculomotor
3. Olfactory
4. Optic

ASSIGNMENT SHEET #6

_____M. The sense of taste is limited to how many basic tastes?

1. Two
2. Three
3. Four
4. Six

_____N. The inner ear contains the essential structures for hearing and equilibrium. The structure that contains the receptors for hearing is the

1. Cochlea
2. Fenestra ovalis
3. Semicircular canals
4. Vestibule

_____O. The structure in the inner ear that contains the receptors for equilibrium is the

1. Cochlea
2. Organ of Corti
3. Semicircular canals
4. Stapes

_____P. The inner and middle ear are both into contact with each other by the

1. Eustachian tube
2. Incus
3. Round and oval windows
4. Tympanic membrane

_____Q. The ear is divided into how many parts?

1. One
2. Two
3. Three
4. Four

_____R. About 1 inch in length, the external auditory canal extends from the pinna to the

1. Eustachian tube
2. Incus
3. Stapes
4. Tympanic membrane

_____S. The outer layer of tissue of the eyeball is the

1. Choroid coat
2. Cornea
3. Retina
4. Sclera

ASSIGNMENT SHEET #6

_____T. The sense of taste is also called the

1. Gustatory sense
2. Olfactory sense
3. Otofactory sense
4. Tactile sense

_____U. Referred pain occurs only from stimulation of

1. Cranial nerves
2. Deep structures or viscera
3. Epithelium
4. Spinal nerves

_____V. Another name for the lacrimal glands is the

1. Per tonsora
2. Retinal glands
3. Salivary glands
4. Tear glands

_____W. Pain from the internal organs is called

1. Referred pain
2. Somatic pain
3. Superficial pain
4. Visceral pain

_____X. Which of the following pairs of senses are most closely related?

1. Hearing and smell
2. Sight and hearing
3. Taste and smell
4. Touch and pain

_____Y. The middle ear is a small bony cavity located in the temporal bone and contains three small movable bones known as the

1. Incus, patella, coccyx
2. Malleus, incus, patella
3. Stapes, carpal, ovalis
4. Stapes, incus, malleus

RESPIRATORY SYSTEM
UNIT V

UNIT OBJECTIVE

After completing this unit, the student should be able to identify the structures and describe the function of the respiratory system. The student will show this ability by completing the unit test with a minimum of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match to their correct descriptions terms associated with the respiratory system.
2. State the purpose of the respiratory system.
3. Distinguish between characteristics of respiration and characteristics of breathing.
4. Identify the parts of the respiratory system.
5. Select correct characteristics of the nose and its accessory structures.
6. List the functions of the nose.
7. Select correct characteristics of the pharynx.
8. Match divisions of the pharynx to their correct descriptions.
9. Select correct characteristics of the larynx.
10. Name characteristics of the trachea.
11. Answer questions about the bronchi.
12. Select correct characteristics of the lungs.
13. Name functions of the lungs.
14. Select correct characteristics of the pleura.
15. Name and describe the divisions of the thorax.
16. Match muscles that change the size of the thorax to their correct actions.
17. Select from a list ways of maintaining a healthy respiratory system.
18. Describe the education and duties of health occupations related to the respiratory system.

RESPIRATORY SYSTEM
UNIT V

INFORMATION SHEET

I. Terms and definitions

A. **Adenoids** — Masses of lymphoid tissue found in the oropharynx; also called the *pharyngeal tonsils*

B. **Apnea** — Absence or cessation of breathing

C. **Aspiration** — To draw in or out by suction

(NOTE: Foreign bodies may be aspirated into the nose, throat, or lungs on inspiration and cause respiratory problems.)

D. **Cilia** — Hairlike projections on cells lining the respiratory structures

E. **Eustachian tube** — Passageway that connects middle ear with pharynx

F. **Expiration** — Expulsion of air from the lungs

G. **Hilum** — Depression where ducts, nerves, or vessels enter or exit an organ

H. **Inspiration** — Drawing of air into lungs

I. **Larynx** — Voice box

J. **Nares** — Nostrils

K. **Respiratory system** — Body system dealing with the lungs and other structures responsible for the inhalation and exhalation of air

L. **Sac** — Cavity or pouch; baglike part of an organ

M. **Serous membrane** — Thin layer of tissue that lines the walls of body cavities, enclosing the contained organs and secreting a watery fluid

N. **Thorax** — Chest cavity

O. **Tonsils** — Masses of lymphoid tissue found in nasopharynx

P. **Ventilation** — Oxygen supplied to body through lungs

II. Purpose of the respiratory system — To bring air and blood into intimate contact so that oxygen can be added to the blood and carbon dioxide can be removed

(NOTE: The respiratory system is considered essential for life because without oxygen the body's cells cannot survive. The respiratory and circulatory systems are almost considered as one, because one cannot function without the other. They share the responsibility of delivering oxygen to the body's cells and carrying waste products away.)

INFORMATION SHEET

III. Characteristics of respiration and breathing

A. Respiration

1. Is process of breathing as well as the utilization of oxygen and production of carbon dioxide by body cells

2. Consists of external respiration (pulmonary respiration), which is the process of taking air into the lungs and passing oxygen from the alveoli (air sacs) into the blood; and internal respiration (cellular respiration), which is the process of passing oxygen from the blood into the cells and carbon dioxide from cells into blood

3. Is controlled by carbon dioxide level in blood

(NOTE: A high carbon dioxide level stimulates respirations to allow the carbon dioxide to be exhaled and the oxygen to enter the bloodstream. A low carbon dioxide level decreases the respiratory rate.)

B. Breathing

1. Is mechanical movement of the chest and diaphragm, resulting in the inhalation of air into and the exhalation of air out of lungs

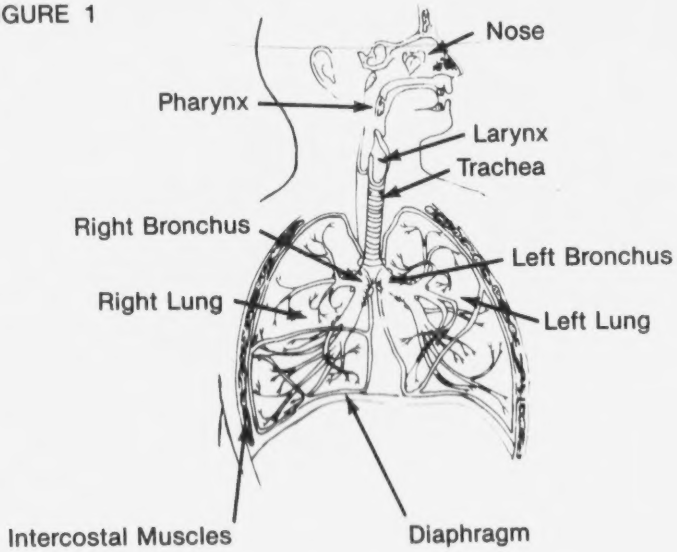
2. Consists of inspiration, the inhaling of air; and expiration, the exhaling of air

3. Is controlled by the medulla oblongata and the pons, which are located in the brain stem

IV. Parts of the respiratory system (Figure 1)

(NOTE: Because the lungs are incapable of independent movement, other structures are necessary for the intake of air and the expansion of the lungs. Also, the entire respiratory cavity is lined with ciliated mucous membrane.)

FIGURE 1



INFORMATION SHEET

V. Characteristics of the nose and its accessory structures

   A. Nose

      1. Consists of two nasal cavities lying between roof of the mouth and the cranium

      2. Contains openings in front known as *nostrils* or *anterior nares*

      3. Contains a vertical partition known as the *nasal septum* that separates the nasal cavities

      4. Contains very vascular mucous membranes that provide warmth and moisture to surface cells

   B. Sinuses

      1. Are cavities lined with ciliated mucous membranes that open into the nasal cavities

      2. Function to warm, moisten, and filter air

      3. Consist of four sets of two cavities each in the following locations: frontal, maxillary, sphenoidal, ethmoidal

   C. Eustachian tube — Opens into nasopharynx, and equalizes air pressure between external and middle ear

   D. Nasolacrimal ducts — Communicate indirectly with lacrimal gland; drain tears into nasal passages

VI. Functions of the nose

   A. Serves as passageway for air going to lungs

   B. Warms, moistens, and filters air of impurities

   C. Serves as the organ of smell

      (NOTE: Smell receptors are located in the mucous membrane.)

   D. Aids in pronunciation of certain sounds, especially of *n, m,* and *ng*

VII. Characteristics of the pharynx

   A. Is a muscular tubelike structure about 5 inches (2.7 cm) long that extends from base of skull to esophagus

   B. Is composed of muscle lined with mucous membrane

INFORMATION SHEET

C. Serves as a passageway for both the respiratory and digestive tracts

D. Plays an important role in pronunciation, especially in the production of different vowel sounds

E. Is referred to as the *throat*

F. Has three divisions

VIII. Divisions of the pharynx

A. Nasopharynx

1. Upper portion lying behind nose and above palate
2. Contains adenoids
3. Communicates with eustachian tube

B. Oropharynx

1. Middle portion lying behind mouth and between palate and hyoid bone
2. Contains two sets of tonsils: faucial or palatine tonsils and lingual tonsils (base of tongue)

   (NOTE: The faucial or palatine tonsils are the tonsils removed during a tonsillectomy.)

C. Laryngopharynx — Lower portion lying immediately below hyoid bone and above larynx

IX. Characteristics of the larynx

A. Is the organ of voice; also called the *voice box*

B. Consists of nine pieces of cartilage connected by ligaments and moved by various muscles

C. Contains two pairs of bands (cords)

1. False vocal cords — Lie at upper end along sides of larynx
2. True vocal cords — Lie directly under false vocal cords
   a. Vibrate like reeds of a pipe organ and make vocal sounds
   b. Are set into vibration by the flow of air from the lungs

INFORMATION SHEET

c. Incorporate the glottis, a space (slit) between the vocal folds

(NOTE: Because the male larynx is larger, the vocal folds are also larger, accounting for the difference in pitch.)

D. Is shaped like a triangular box with flat sides and a prominent ridge in front, and acts as a passageway for air between pharynx and trachea

E. Lies at upper end of trachea and just below pharynx

X. Characteristics of the trachea

A. Trachea is a mucous membrane lined tube of smooth muscle about 4½ inches (11.4 cm) long and held open by C-shaped rings of hyaline cartilage, the open portion of which face the esophagus

B. Trachea is also called the *windpipe*

C. Trachea provides an open passageway for air from the larynx to the bronchi of the lungs

D. Obstruction for even a few minutes can cause death from asphyxiation

XI. Characteristics of the bronchi

A. Bronchi consist of the right bronchus and the left bronchus, with the right bronchus being shorter and more vertical than the left

B. Bronchi resemble the trachea in structure as the walls contain cartilage rings and ciliated mucous lining

C. Each primary bronchus enters lung at hilum and immediately subdivides into smaller branches called *secondary bronchi*

D. Secondary bronchi continue to branch, forming small bronchioles that lack cartilage

E. Bronchioles subdivide into smaller and smaller tubes, eventually ending in microscopic branches that divide into alveolar ducts, which in turn end in several alveolar sacs consisting of numerous alveoli (air cells)

F. The trachea, the two primary bronchi, and their many branches resemble an inverted tree, and are spoken of as the *bronchial tree*

G. Bronchi provide a passageway by which air can reach the alveoli of the lungs and allow a gaseous exchange to occur between air and blood

INFORMATION SHEET

XII. Characteristics of the lungs (See Figure 2)

A. Lungs are the essential organs of respiration

B. Lungs are cone-shaped and large enough to fill the pleural portion of the thoracic cavity

C. Lungs are spongy, elastic, and contain the alveoli, which are essential for gaseous exchange

D. Pointed upper margin, or apex, of lung extends slightly above clavicle

E. Broad inferior surface, or base of lung, lies on diaphragm

F. Left lung has an indentation for the heart called the *cardiac notch* or *depression*

G. Right lung is slightly larger, heavier, and shorter than left lung

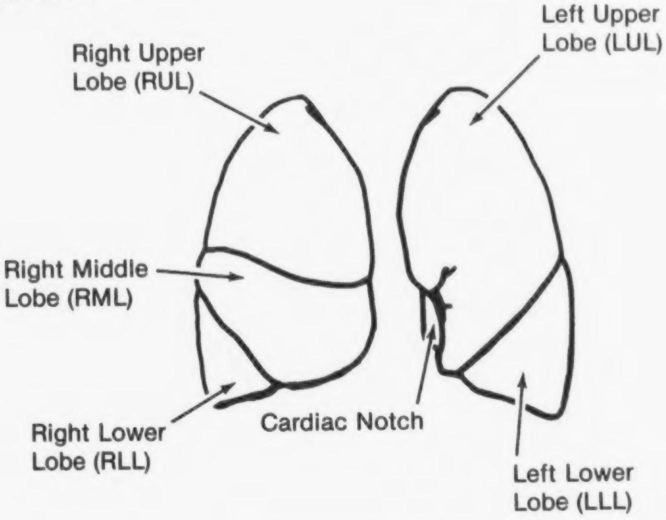
H. At birth the lungs are pink, but with increasing age they become a mottled, gray color due to the inhalation of dust, pollution, and smoke

I. When filled to capacity, the lung can hold about 4,500 cubic centimeters of air; but only about 500 cubic centimeters are inhaled and exhaled in a normal breath

J. The left lung has two lobes; the right lung has three lobes

EXAMPLE:

FIGURE 2


Left Upper Lobe (LUL)
Right Upper Lobe (RUL)
Right Middle Lobe (RML)
Right Lower Lobe (RLL)
Cardiac Notch
Left Lower Lobe (LLL)

INFORMATION SHEET

XIII. Functions of the lungs

A. Act as essential organs of respiration by distributing air throughout the lungs to the alveoli

B. Furnish a place where air can come in close enough contact with blood for gaseous exchange to occur

C. Act as an excretory organ because an individual loses about 400 cubic centimeters of moisture a day in expired air

XIV. Characteristics of the pleura

A. Parietal pleura is a serous membrane that contains the lungs and lines the thoracic cavity

B. Visceral pleura covers outer surface of each lung

C. Pleural space is the potential space formed by the visceral and parietal pleura lying adjacent to each other and contains pleural fluid

D. Pleural fluid is secreted by the serous membranes to act as a lubricant

XV. Divisions of the thorax

(NOTE: These three divisions are separated by partitions of pleura.)

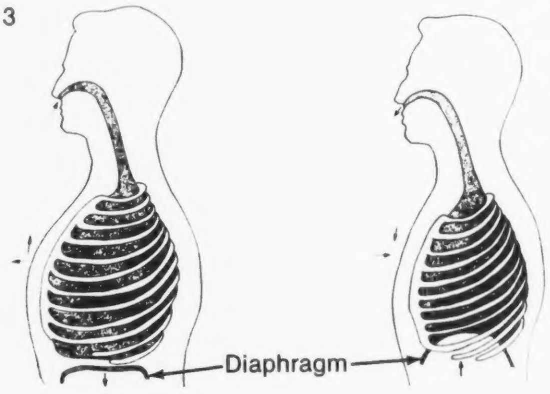
A. Pleural cavities (2) — Area occupied by lungs

B. Mediastinum — Space between lungs

C. Pericardium — Area occupied by heart

XVI. Actions of muscles that change the size of the thorax (Figure 3)

FIGURE 3



Inspiration

Expiration

INFORMATION SHEET

A. Diaphragm

1. On inspiration, diaphragm contracts, flattens, and moves downward to enlarge the thoracic cavity

2. On expiration, diaphragm relaxes, moving upward to decrease the size of the thoracic cavity

B. Intercostal muscles

1. Internal intercostals depress the ribs

2. External intercostals elevate the ribs

XVII. Ways of maintaining a healthy respiratory system

A. Do not smoke

B. Avoid working in polluted air

C. Exercise regularly to build lung capacity

(NOTE: Any exercise that increases respirations will also increase lung capacity. Exercise habits are individual, and regular exercise can be on alternate days or daily.)

D. Wear approved protective clothing and equipment when engaged in a hazardous occupation

EXAMPLES: Wear a respirator and protective clothing when working with asbestos or when using chemical sprays.

E. Maintain desirable body weight

(NOTE: Obesity puts strain on the lungs and respiratory system.)

F. Use good posture

INFORMATION SHEET

XVIII. Health occupations related to the respiratory system (Table 1)

TABLE 1

Occupaton	Education	Duties
Pulmonologist	Medical school plus a minimum of five years in hospital/ and or university training, three of which are devoted to general medicine, two in pulmonary disease	Diagnosis and treatment of lung, chest, and related heart disorders
Respiratory care technician	Approximately 400 hours of lecture and lab instruction, usually in a vocational-technical school, plus 600 hours of clinical practice in a hospital	Therapeutic and diagnostic procedures under medical supervision
Respiratory therapist	Approximately 1000 hours of classroom lecture and laboratory instruction , usually in community colleges or four-year universities, plus 1000 hours of clinical training	Treatment and care of patients with deficiencies and abnormalities associated with the process of breathing; teaches, researches, and supervises

RESPIRATORY SYSTEM
UNIT V

ASSIGNMENT SHEET #1 — ANSWER STUDY QUESTIONS ABOUT THE RESPIRATORY SYSTEM

NAME ______________________________ SCORE ______________

This assignment sheet is designed to aid you in studying for the unit test and in assessing your knowledge of the respiratory system. Each question is the multiple-choice type with four possible answers. Read each question carefully and then select the answer that best completes the statement or answers the question. Write the correct numbers in the blanks. You may consult additional references to answer the questions.

_____A. The waste product of respiration is

1. Carbon dioxide
2. Carbon monoxide
3. Hydrogen
4. Oxygen

_____B. Hairlike projections on the cells lining the respiratory system are called

1. Cilia
2. Flagella
3. Projecti
4. Villi

_____C. The use each body cell makes of its oxygen supply is described as

1. Breathing
2. Combustion
3. External respiration
4. Internal respiration

_____D. An important function of the alveoli in the respiratory system is

1. External respiration
2. To continue breathing activities
3. To keep oxygen level in brain constant
4. To pass oxygen from respiratory system into circulatory system

_____E. Food and fluids are kept out of the trachea by the action of the

1. Epiglottis
2. Esophagus
3. Faucial
4. Hard palate

_____F. Paralysis of the diaphragm would cause respiratory difficulty because it would be impossible

1. For alveolar muscles to relax
2. For the intercostal muscles to contract
3. To increase and decrease size of chest cavity
4. To prevent bronchial spasm

ASSIGNMENT SHEET #1

_____G. The respiratory tract is lined with

1. Connective tissue
2. Mucous membrane
3. Serous membrane
4. Synovial membrane

_____H. Hoarseness or inability to make voice sounds probably would be the result of inflammation or injury to the

1. Alveoli
2. Larynx
3. Nasal cavities
4. Trachea

_____I. Adenoids is the common term for the

1. Lingual tonsils
2. Palatine tonsils
3. Pharyngeal tonsils
4. Tonsillar pillars

_____J. The system that serves to exchange gases between the air and the blood is known as the

1. Cardiovascular system
2. Excretory system
3. Genitourinary system
4. Respiratory system

_____K. Many children with tonsillitis develop an ear infection. This is because the ear and throat are connected by the

1. Epiglottis
2. Esophagus
3. Eustachian tube
4. Larynx

_____L. The respiratory center is located in the part of the brain called the

1. Cerebellum
2. Medulla
3. Midbrain
4. Thalamus

_____M. The nerve that controls the diaphragm is known as the

1. Celiac nerve
2. Phrenic nerve
3. Polyp nerve
4. Sciatic nerve

ASSIGNMENT SHEET #1

_____N. The larynx is

1. More complex in the male
2. The same in both the male and female
3. Usually larger in the female
4. Usually larger in the male

_____O. All of the following are true of the trachea *except*

1. It extends from the larynx to the bronchi
2. It is a tube surrounded by C-shaped rings of cartilage
3. It is lined with cilia
4. It is located above the larynx

_____P. The tonsils that are removed during a tonsillectomy are located in the

1. Epiglottis
2. Larynx
3. Pharynx
4. Trachea

_____Q. The true vocal cords are fibrous bands that stretch across the

1. Epiglottis
2. Glottis
3. Larynx
4. Pharynx

_____R. Another name for the chest is the

1. Mediastinum
2. Parietal pleura
3. Thorax
4. Ventrax

_____S. Another name for the trachea is the

1. Adam's apple
2. Gullet
3. Voice box
4. Windpipe

_____T. *Costal* is from the Latin and means

1. Related to the clavicle
2. Related to the lungs
3. Related to the ribs
4. Related to the tongue

ASSIGNMENT SHEET #1

_____U. Faster and deeper respirations are ordered by the respiratory center in the brain when

1. Accumulated food supplies must be burned
2. Activity is decreased
3. Carbon dioxide accumulates in the bloodstream
4. The bronchioles go into spasm

_____V. The two body systems that share the function of supplying an adequate amount of oxygen to all cells of the body are the

1. Circulatory and respiratory systems
2. Circulatory and skeletal systems
3. Digestive and respiratory systems
4. Muscular and respiratory systems

_____W. The secretion produced by the membrane lining the respiratory tract is called

1. Cilia
2. Mucous
3. Serum
4. Sputum

_____X. When the cells of the body are not receiving any oxygen, the condition is called

1. Anoxia
2. Apnea
3. Asphyxiation
4. Dyspnea

_____Y. The vertical size of the chest cavity is increased by the

1. Contraction of the diaphragm
2. Contraction of the intercostal muscles
3. Relaxation of the diaphragm
4. Relaxation of the intercostal muscles

_____Z. The vocal cords are in the

1. Bronchi
2. Larynx
3. Pharynx
4. Trachea

_____AA. Which of the following is *not* a function of the nasal passage?

1. Acting as a filter
2. Allowing for absorption of oxygen and carbon
3. Serving as a passageway for air
4. Warming and moistening inhaled air

ASSIGNMENT SHEET #1

_____ BB. The structure commonly called the throat is the

1. Bronchioles
2. Epiglottis
3. Larynx
4. Trachea

_____ CC. The large dome-shaped muscle that separates the thoracic and abdominal cavities is called the

1. Diaphragm
2. Intercostal muscle
3. Peritoneal fold
4. Thoracic muscle

_____ DD. The pleura is the

1. Lower part of the lung
2. Main branch of the bronchial tree
3. Muscle most important in respiration
4. Smooth, moist membrane that lines the chest cavity and covers outer surface of lung

_____ EE. The space between the lungs is known as the

1. Epistaxis
2. Jejunum
3. Mediastinum
4. Melanin

_____ FF. The base of the lung rests on the

1. Diaphragm
2. Hilum
3. Primary bronchi
4. Stomach

_____ GG. If air is introduced into the pleural space, it is known as

1. Hemothorax
2. Intrathoracic
3. Pneumothorax
4. Thoracentesis

_____ HH. The collapse of the whole or part of a lung due to an obstruction of the bronchus is known as

1. Asphyxiation
2. Atelectasis
3. Emphysema
4. Thoracentesis

CIRCULATORY SYSTEM
UNIT VI

UNIT OBJECTIVE

After completing this unit, the student should be able to describe the structure and function of the circulatory system. The student will show this ability by completing the unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Select correct definitions of terms associated with the blood vessels and systemic circulation.
2. Select from a list functions of the circulatory system.
3. Select correct definitions of terms associated with cardiac structure.
4. Identify structures of the heart.
5. Identify major veins and arteries.
6. Match to their correct definitions terms associated with the blood.
7. State general functions of the blood.
8. List principal components of blood plasma.
9. Select correct characteristics of different blood cells.
10. List the different blood groups.
11. Discuss the Rh factor.
12. Select from a list ways to help prevent circulatory diseases and disorders.
13. Describe education and duties of health occupations related to the circulatory system.

CIRCULATORY SYSTEM
UNIT VI

INFORMATION SHEET

I. Terms and definitions associated with blood vessels and systemic circulation

A. **Aorta** — Main trunk of the arterial system; largest artery

B. **Arteriole** — Very small artery

C. **Artery** — Blood vessel with three muscular walls that carries blood from pumping chambers of heart to organs

D. **Capillary** — Minute blood vessel that connects arterioles and venules; made up of endothelial cells that carry materials necessary to cell life into tissues and carry waste products from the cells

E. **Lymph nodes (lymph glands)** — Small bundles of lymphoid tissue that produce lymphocytes and monocytes that act as filters to keep matter, especially bacteria, from getting into the bloodstream

F. **Lymphatic system** — Network of very small capillaries that collects excess tissue fluid and certain waste products from body cells

(NOTE: Lymph resembles plasma, but contains less protein.)

G. **Portal circulation** — Movement of blood from stomach, intestine, spleen, and pancreas veins that empty into one vessel, the portal vein, which carries blood loaded with digested food to the liver

(NOTE: The liver extracts food materials for storage and modification, including removal of toxins.)

H. **Vein** — Blood vessel that carries blood up to the heart; equipped with one-way valve that permits blood to flow in only one direction

I. **Venule** — Very small vein

II. Functions of the circulatory system

A. Transporting nutrients and oxygen to body cells

B. Transporting waste products to excretory organs

C. Distributing hormones and antibodies

D. Assisting in control of body temperature

E. Maintaining a stable chemical balance between cell and environment

INFORMATION SHEET

III. Terms and definitions associated with cardiac structure

A. **Atrium** — One of two upper chambers or compartments of heart (See Figure 2)

(NOTE: The right atrium receives venous blood as it returns from the body; the left atrium receives blood from the right atrium and pumps it into the lungs.)

B. **Atrioventricular (A-V) bundle (bundle of His)** — Group of cardiac muscle fibers that supplies muscular connection between atria and ventricles; extends downward into septum, divides into right and left branches, and ends in numerous strands (Purkinje fibers) in the papillary and ventricular muscles (See Figure 4)

C. **Atrioventricular (A-V) node** — Mass of specialized muscle fibers located in floor of right atrium near interatrial septum, responsible for conducting impulses to conduction fibers of heart (See Figure 4)

D. **Cardiac** — Pertaining to the heart

E. **Cardiac conduction system** — Combined nerve and muscle tissue that initiates and distributes cardiac impulses throughout the myocardium; composed of A-V node, A-V bundle, S-A node, and Purkinje fibers

F. **Cardiology** — Study of the heart

G. **Coronary** — Pertaining to the heart

H. **Diastole** — Period during which heart rests between contractions

I. **Endocardium** — Smooth layer of cells that lines inside of heart and forms valves (See Figure 2)

J. **Myocardium** — Middle and thickest layer of heart muscles (See Figure 2)

K. **Pericardium** — Double membrane that covers heart and secretes fluid that provides lubrication to prevent friction during heart action (See Figure 2)

L. **Sinoatrial (S-A) node** — Small mass of specialized muscle fibers in posterior wall of right atrium just below opening of superior vena cava; usually acts as a pacemaker by establishing rhythm of cardiac contractions (See Figure 4)

M. **Septum** — Wall in middle of heart that divides it into right and left sides

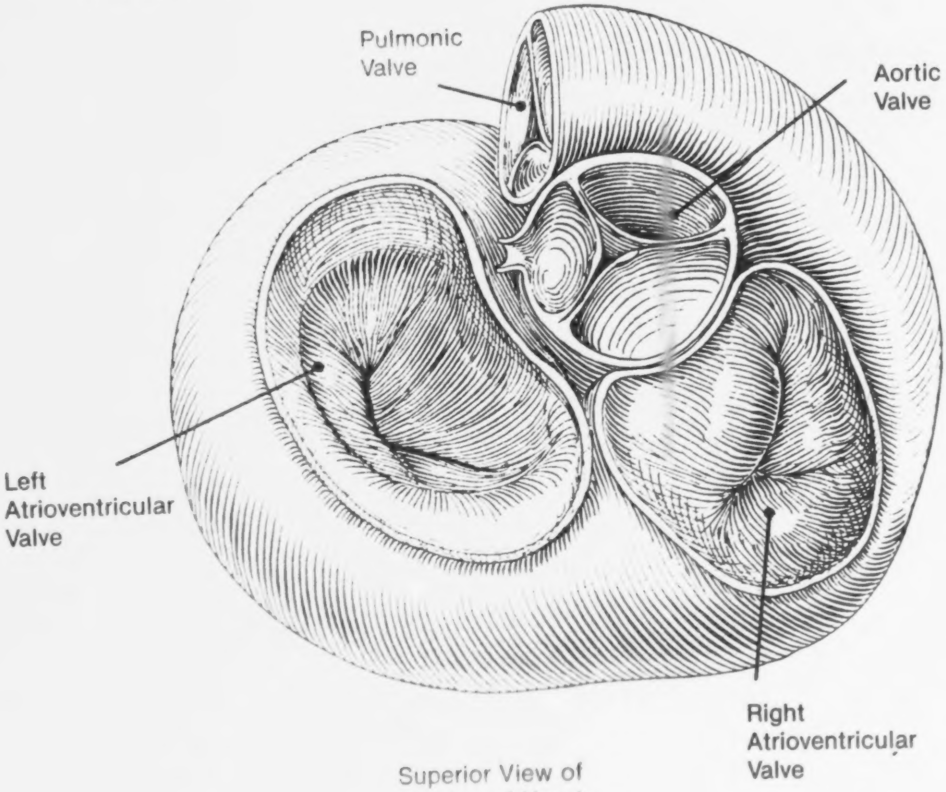
N. **Systole** — Period during which heart contracts

O. **Valve** — Membranous fold in passageway of heart that prevents return of blood passing through it; located at entrance and exit of each ventricle to keep blood from returning and to keep blood flowing in correct direction (See Figure 1)

EXAMPLE: Superior view of section of heart

INFORMATION SHEET

FIGURE 1


Pulmonic Valve
Aortic Valve
Left Atrioventricular Valve
Right Atrioventricular Valve

Superior View of Section of Heart

From *Melloni's Illustrated Medical Dictionary*, second edition, by Ida Dox, Biagio John Melloni, and Gilbert M. Eisner © 1985, the Williams & Wilkins Co., Baltimore.

P. **Ventricle** — Lower two pumping chambers of heart (See Figure 2)

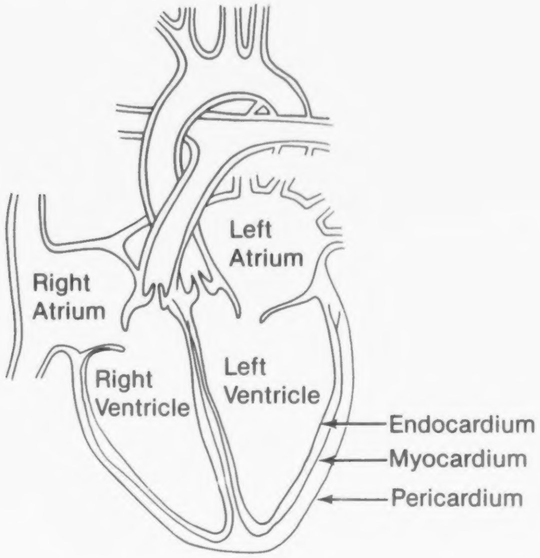
(NOTE: The right ventricle is a thick-walled space that receives blood from the right atrium and pumps it into the lungs; the left ventricle receives blood from the left atrium and pumps it to the rest of the body through the arteries.)

INFORMATION SHEET

IV. Structures of the heart (Figures 2 - 4)

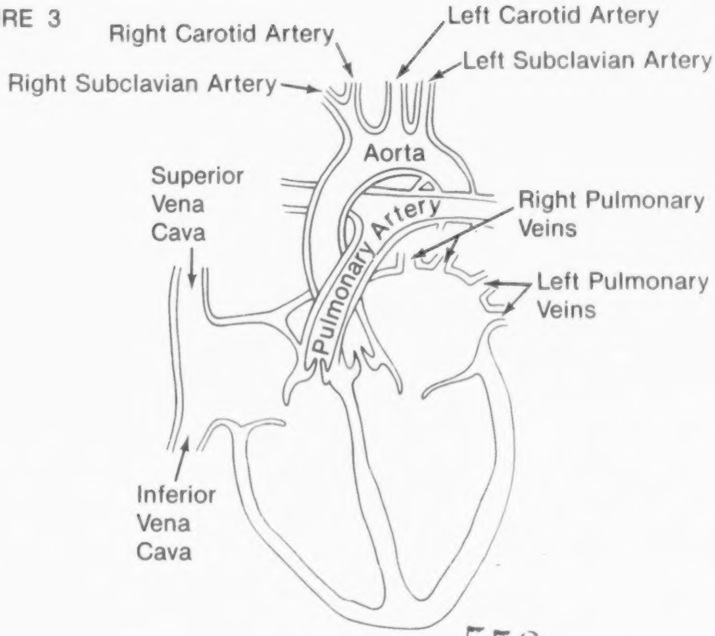
A. Layers and chambers

FIGURE 2


Left Atrium
Right Atrium
Right Ventricle
Left Ventricle
Endocardium
Myocardium
Pericardium

B. Vessels

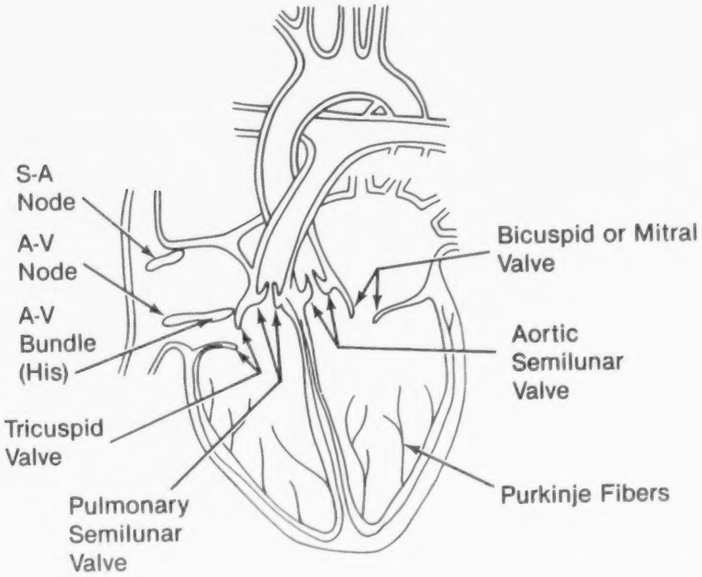
FIGURE 3


Right Carotid Artery
Left Carotid Artery
Left Subclavian Artery
Right Subclavian Artery
Aorta
Superior Vena Cava
Right Pulmonary Veins
Pulmonary Artery
Left Pulmonary Veins
Inferior Vena Cava

INFORMATION SHEET

C. Valves and conducting structures

FIGURE 4

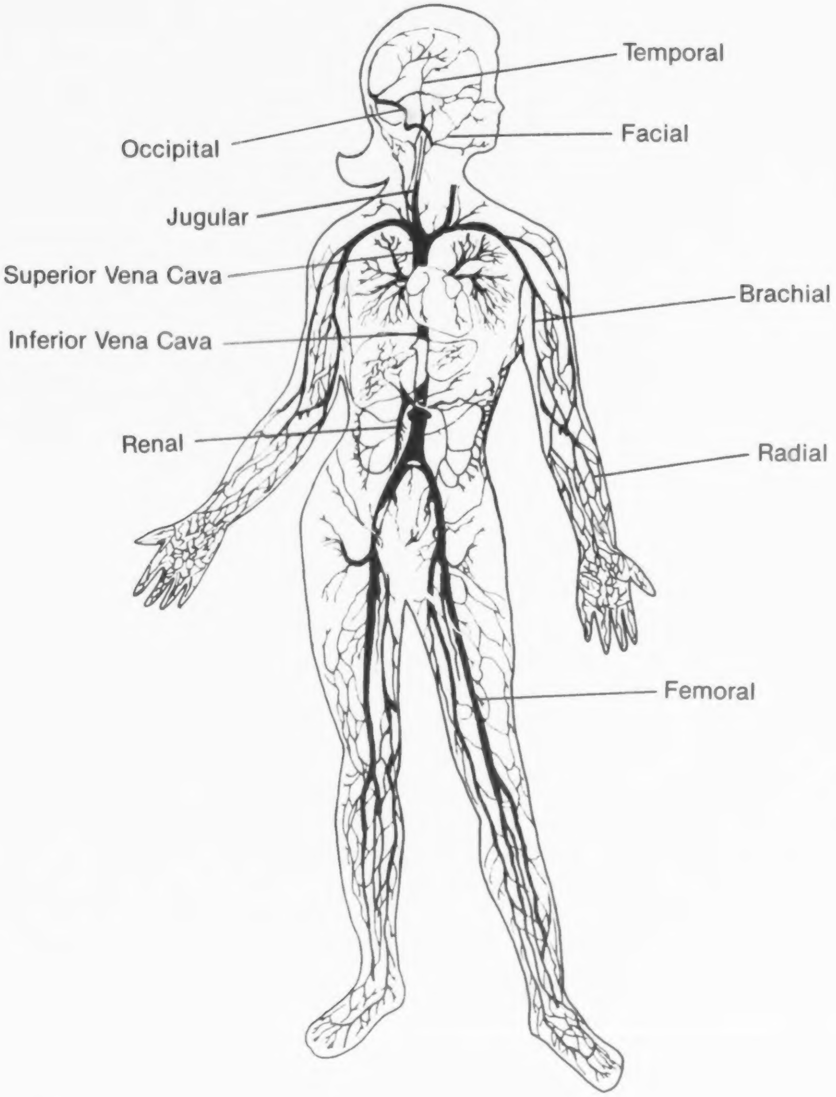

S-A Node
A-V Node
A-V Bundle (His)
Tricuspid Valve
Pulmonary Semilunar Valve
Bicuspid or Mitral Valve
Aortic Semilunar Valve
Purkinje Fibers

INFORMATION SHEET

V. Major veins and arteries

A. Major veins (Figure 5)

FIGURE 5

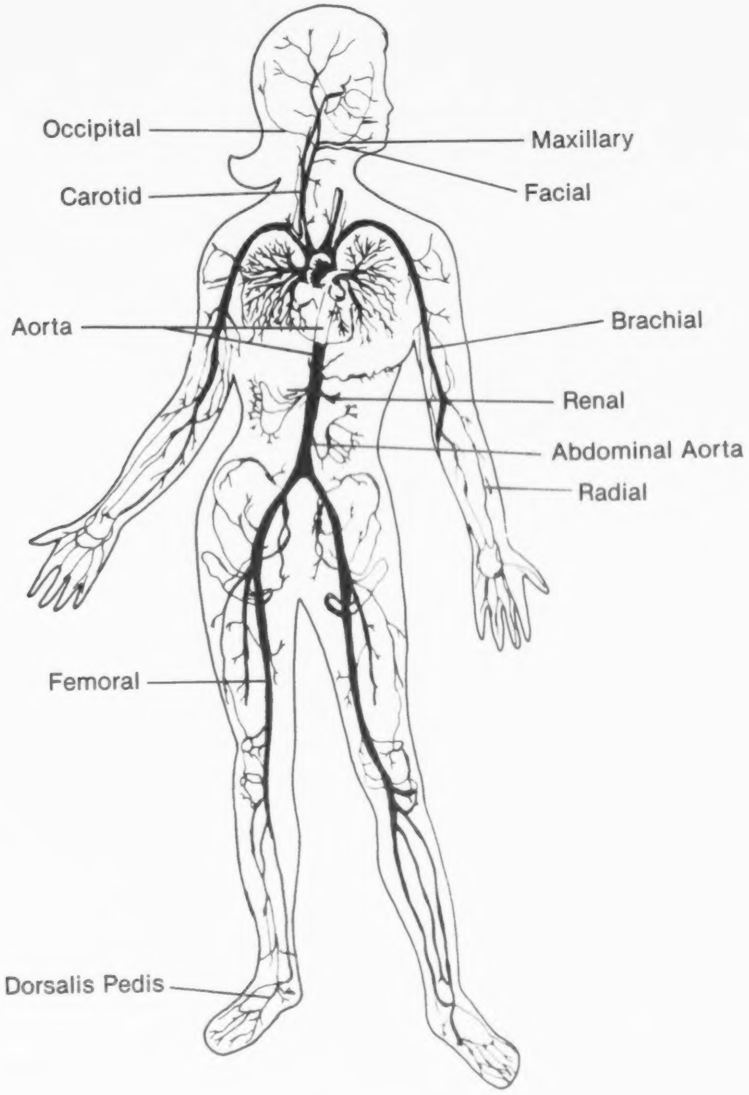

Temporal
Occipital
Facial
Jugular
Superior Vena Cava
Brachial
Inferior Vena Cava
Renal
Radial
Femoral

Used with permission of National Publishers of the Black Hills, Inc., from *Cardiology*, second edition, 1984.

INFORMATION SHEET

B. Major arteries (Figure 6)

FIGURE 6


Occipital
Maxillary
Facial
Carotid
Aorta
Brachial
Renal
Abdominal Aorta
Radial
Femoral
Dorsalis Pedis

Used with permission of National Publishers of the Black Hills, Inc., from *Cardiology*, second edition, 1984.

INFORMATION SHEET

VI. Terms and definitions associated with the blood

A. **Anemia** — Deficiency of red blood cells or hemoglobin or both

(NOTE: There are many types of anemias, with the most common type resulting from a deficiency of iron [Fe] in the blood. Other types of anemia include pernicious anemia, aplastic anemia, and sickle-cell anemia.)

B. **Anticoagulant** — Agent that prevents or delays formation of blood clot

EXAMPLE: Heparin, an acid manufactured by the liver

C. **Bone marrow puncture** — Insertion of hollow needle into marrow cavity of a flat bone to withdraw a bone marrow sample

D. **Coagulation** — Clotting of blood

E. **Corpuscles** — Blood cells

F. **Gamma globulin** — Antibody fraction of blood

G. **Granulocytes** — White blood cells having a lobed nucleus and granules in the cytoplasm (See Figure 6)

H. **Hematology** — Study of the blood

I. **Hemoglobin** — Oxygen-bearing protein of red blood cells

J. **Hemorrhage** — Abnormal discharge of blood, either externally or internally

K. **Homeostasis** — State of chemical balance between a cell and its environment

L. **Lipid** — Any of a group of fat or fatlike substances that are insoluble in water

M. **Plasma** — Liquid portion of blood

N. **Shock** — Depression of body functions due to failure of circulation

O. **Transfusion** — Injection of one person's blood into the blood vessels of another person

VII. General functions of blood

A. Transportation of oxygen, nutrients, waste products, and hormones

B. Maintenance of homeostasis

C. Resistance to infection

VIII. Principal components of blood plasma

A. Water

(NOTE: Water comprises about 90 percent of blood plasma and acts as a carrier for the remaining one hundred or so components.)

INFORMATION SHEET

B. Blood proteins

EXAMPLES: Amino acids, antibody fractions, blood-clotting proteins, serum albumin

(NOTE: Blood proteins comprise about 7 percent of blood plasma.)

C. Carbohydrates, mainly glucose

D. Lipids

E. Mineral salts

(NOTE: These are needed for bone formation, hormone production, red cell production, and maintenance of acid-base balance.)

F. Waste products

G. Hormones and vitamins

H. Gases (oxygen, nitrogen, and carbon dioxide.)

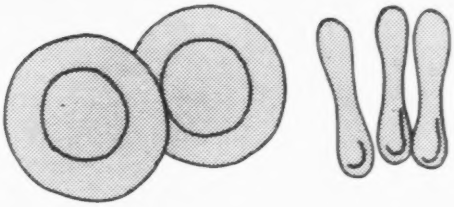
IX. Characteristics of blood cells

A. Erythrocytes (Figure 7)

(NOTE: Erythrocytes are also called *red blood cells* [RBCs] and *red corpuscles*. They are found in red bone marrow, spleen, and other lymph tissue.)

EXAMPLE:

FIGURE 7



Reproduced by permission from Anthony, Catherine Parker, and Thibodeau, Gary A.: *Structure & Function of the Body*, ed. 7, St. Louis, 1984, Times Mirror/Mosby College Publishing.

1. Transport oxygen to cells and carbon dioxide from cells
2. Are minute, disc-shaped cells that look alike or very similar
3. Have an average life span of 120 days
4. Remain in the bloodstream unless a vessel is cut or ruptured

INFORMATION SHEET

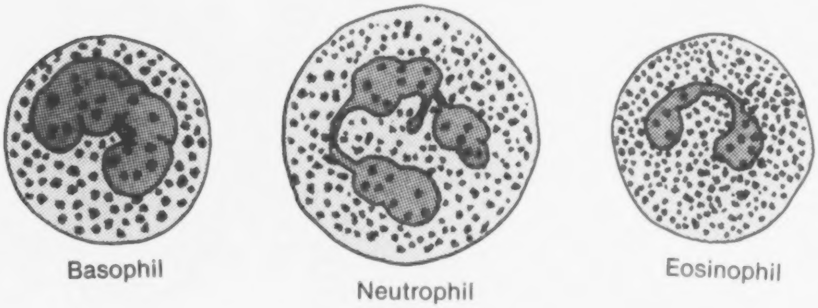
B. Leukocytes (Figures 8 and 9)

(NOTE: Leukocytes are also called *white blood cells* [WBCs] or *white corpuscles.*)

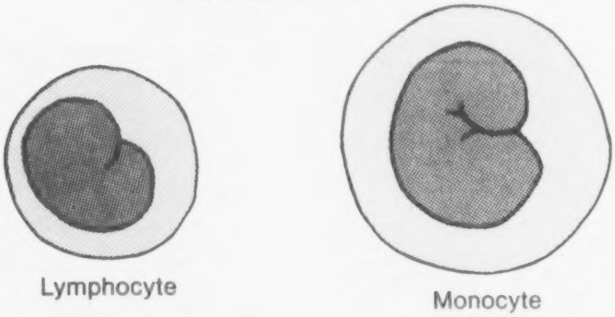
EXAMPLES:

FIGURE 8

Granular Leukocytes



Nongranular Leukocytes



Reproduced by permission from Anthony, Catherine Parker, and Thibodeau, Gary A.: *Structure & Function of the Body*, ed. 7, St. Louis, 1984, Times Mirror/Mosby College Publishing.

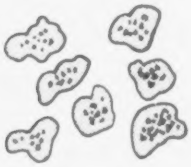
1. Fight infection
2. Are colorless
3. Vary in shape and size
4. Have average life span of 9 days
5. May move out of blood vessels by passing between cells of vessel walls

INFORMATION SHEET

C. Platelets (Figure 9)

(NOTE: Platelets are found in the red bone marrow. They are also called *thrombocytes;* they aid in the coagulation of blood.)

FIGURE 9



Reproduced by permission from Anthony, Catherine Parker, and Thibodeau, Gary A.: *Structure & Function of the Body*, ed. 7, St. Louis, 1984, Times Mirror/Mosby College Publishing.

1. Are irregular in size and shape
2. Are very fragile and break easily under stress
3. Can be seen in clusters

X. Blood groups

(NOTE: Every person's blood belongs to one of the following four blood groups or types. Blood types are identified by the presence in the red blood cells of certain antigens, substances that can stimulate the body to produce antibodies. In addition, the blood type will either be positive or negative, based on the presence or absence of agglutinogens [Rh factors] in the blood. Certain blood types are compatible with certain others [see Table 1]; however, blood is nearly always given to persons of the same blood group, and always after cross-matching to minimize adverse reactions.)

A. Type O

(NOTE: About 40 percent of all people have type O blood. Type O blood is called the *universal donor* because it can be given to all the blood types.)

B. Type A

(NOTE: Type A blood is found in about 40 percent of all people.)

C. Type B

(NOTE: About 10 percent of all people have type B blood.)

D. Type AB

(NOTE: About 4 percent of all people have type AB blood. Type AB blood is called the *universal recipient* because it contains neither anti-A nor anti-B antibodies and can be received by all of the blood types.)

INFORMATION SHEET

TABLE 1: Blood group compatibilities

Blood type	**Can receive blood from**	**Can give blood to**
A	A and O	A and AB
B	B and O	B and AB
AB	All	AB
O	O	All

XI. Rh factor

A. Red blood cells in Rh-positive blood contain an antigen called the Rh-factor; red blood cells in Rh-negative blood do not contain this factor

EXAMPLE: Type AB, Rh-positive blood contains a Type A antigen, a type B antigen, and the Rh-factor

B. If Rh-positive cells are introduced into an Rh-negative person's body, anti-Rh antibodies soon appear in the blood plasma

C. The red blood cells of an Rh-positive baby born to an Rh-negative mother and an Rh-positive father may stimulate the mother's body to form anti-Rh antibodies

D. When these anti-Rh antibodies are passed in a future pregnancy to another Rh-positive fetus, it may develop a disease called *erythroblastosis fetalis* caused by the mother's Rh antibodies destroying the baby's red blood cells

E. An anti-Rh globulin (Rhogam), which prevents the antibodies from developing, can now be given to the mother after the birth of an Rh-positive baby or after an abortion

(NOTE: The medical definition of an abortion is the termination of a pregnancy before the period of viability for the fetus, regardless of whether the abortion was accidental or induced.)

XII. Ways to help prevent circulatory diseases and disorders

A. Maintain proper nutrition to maintain proper weight for age and height

(NOTE: Obesity does not directly cause heart disease, but it does put a strain on the heart. Also, certain food elements are essential for blood formation and clotting.)

B. Exercise regularly to aid circulation, but avoid sudden bursts of strenuous activity

C. Avoid sudden extremes in temperature

(NOTE: Cold, especially, may affect the blood vessels and cause a heart attack.)

INFORMATION SHEET

D. Avoid the use of tobacco and alcohol as both substances have a damaging effect on the heart and blood vessels

E. Have a regular physical evaluation and seek treatment early for health problems, especially infections

F. Avoid wearing clothing that interferes with circulation

G. Avoid stress whenever possible; learn to manage stress

XIII. Health occupations related to the diagnosis and treatment of problems of the circulatory system (Table 2)

TABLE 2

Occupation	**Education**	**Duties**
Cardiac lab catheterization technician	Usually trained on the job; person with health-related background will be accepted over persons without previous knowledge or experience	Assists in radiology department with cardiac catheterization procedures; assists in maintaining equipment and supplies
Cardiologist	Four-year medical degree program plus a residency in cardiology	Diagnoses and treats persons with diseases and disorders of the cardiovascular system; may specialize in diagnostic areas or move into a surgical residency to specialize in cardiac surgery
Coronary care nurse	One-year vocational nursing program, two-year associate degree program, or four-year baccalaureate degree program	Develops patient care plans, provides patient care, assesses patient progress, communicates with health team members, and provides information to family members
EKG technician	Trained on the job in hospital or physician's office	Takes electrocardiograms used in the diagnosis of cardiovascular diseases and disorders; keeps records; communicates with other members of health team concerning patient care
Hematologist	Four-year medical degree program, plus a residency in hematology	Diagnoses and treats persons with diseases and disorders of the blood; may specialize in blood-related oncology

INFORMATION SHEET

TABLE 2 (Continued)

Occupation	Education	Duties
Medical laboratory technician or assistant	Must complete a two-year program for associate degree; may attend a one-year certified program in a vocational school, hospital, or community college	Works under medical technologist in preparing slides and specimens, and performing procedures used to diagnose diseases and disorders; other tasks include obtaining blood, grouping and typing blood, preparing and staining slides, examining urine and other body fluids, preparing specimens for parasitology study, cleaning and sterilizing equipment, maintaining supplies, keeping records, and labeling specimens
Medical technologist	Three years' undergraduate study to include courses in chemistry, biological science, and math; last year of study includes extensive laboratory experience; a degree may be earned; persons completing a medical technology program must take an examination for certification	Complete diagnostic tests on blood, including blood counts, blood cholesterol levels, typing and cross-matching samples to determine coagulation time and sedimentation rates, and preparing slides for cell studies May perform many other tests on body tissues and fluids other than blood, or may specialize in hemotology
Phlebotomist	Trained on the job or may take a short course in the procedure	Draws blood specimens and prepares specimen for laboratory testing by allowing blood to clot for serum testing or by using an anticoagulant suitable for the test to be performed
Special procedures technologist	Usually prepared through two-year or four-year radiology program; some registered nurses are trained on the job to assist with surgical procedures	Responsible for x-ray procedures; may assist with surgical procedures, monitor vital signs, and provide patient care

CIRCULATORY SYSTEM
UNIT VI

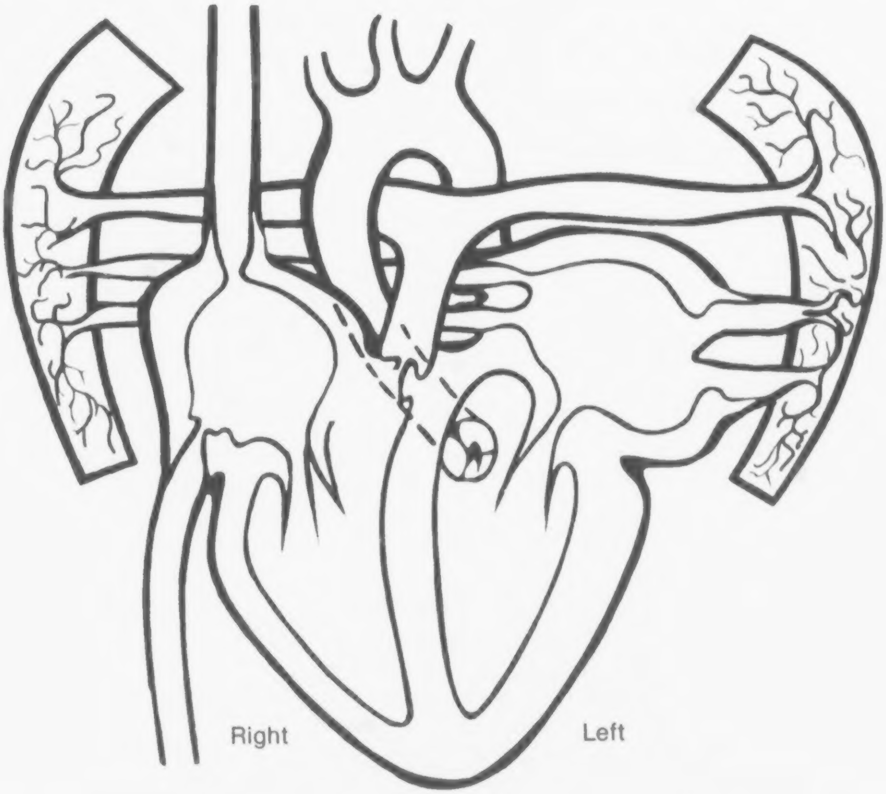
ASSIGNMENT SHEET #1 — TRACE THE FLOW OF BLOOD THROUGH THE HEART

NAME ______________________________ SCORE ______________

Trace the flow of blood through the illustration of the heart below. Start at the superior vena cava. Indicate oxygenated blood with a double arrow ($\rightrightarrows$), and deoxygenated blood with a single arrow ($\longrightarrow$).

Blood flows through the superior and inferior venae cavae into the right atrium of the heart. It then flows through the tricuspid valve and into the right ventricle. From the right ventricle, it flows through the pulmonary valve, into the pulmonary artery, and into the lungs.

Blood returns to the heart from the lungs by flowing through the pulmonary veins into the left atrium. It flows from the left atrium, through the mitral valve, and into the left ventricle. It is then pumped through the aortic valve, into the aorta, and then flows to general arterial circulation.



Adapted with permission of Technicourse from *Life Sciences for Nursing and Health Technologies*, 3rd ed., by Virginia Thomas, copyright 1977.

DIGESTIVE SYSTEM
UNIT VII

UNIT OBJECTIVE

After completing this unit, the student should be able to identify the structures and describe the functions of the digestive system. The student will show this ability by completing the unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match to their correct definitions terms associated with the digestive system.
2. List the functions of the digestive system.
3. Identify the organs of the alimentary canal.
4. Match organs of the alimentary canal to their correct functions.
5. Select from a list correct statements concerning the mouth.
6. Match classes of teeth to their correct functions.
7. Match salivary glands to their correct descriptions.
8. Select from a list characteristics of the stomach.
9. Identify the sections of the stomach.
10. Label divisions of the small and large intestines.
11. Match to their correct divisions characteristics of the small and large intestines.
12. List ways of maintaining a healthy digestive system.
13. Describe the education and duties of health occupations concerned with the digestive system.

DIGESTIVE SYSTEM
UNIT VII

INFORMATION SHEET

I. Terms and definitions

A. **Alimentary** — Pertaining to or caused by food

B. **Bile** — Thick, yellow or greenish fluid secreted by the liver; aids in the digestion and absorption of fats

C. **Bolus** — Small lump or mass of chewed food

D. **Chyme** — Nearly liquid mixture of partly digested food and digestive secretions found in the stomach and small intestine

E. **Digestion** — Process by which food is mechanically and chemically broken down in the gastrointestinal tract into simpler substances that are absorbed into the blood and lymph systems or eliminated from the body

F. **Enzyme** — Complex protein capable of inducing a chemical change in another substance

EXAMPLES: Pepsin, amylase

G. **Feces** — Food residue, bacteria, epithelium, and mucus discharged from the intestines

H. **Flatus** — Gas in digestive tract

I. **Gastroenterology** — Branch of medical science that deals with the physiology and pathology of the digestive system

J. **Mastication** — Chewing

K. **Metabolism** — General term for the chemical process taking place in living tissues and necessary for the maintenance of the living organism

L. **Mucus** — Thick, sticky fluid secreted by some membranes and glands

M. **Peristalsis** — Rhythmical waves of contraction that move food along the gastrointestinal tract

N. **Peritoneum** — Serous membrane over the viscera and lining the abdominal cavity

O. **Rugae** — Folds of mucous membrane on the internal surface of the stomach

P. **Sphincter** — Ringlike muscle that controls an outlet, permitting it to open and close

Q. **Villi** — Short, vascular, threadlike projections covering the mucous membrane of the small intestine

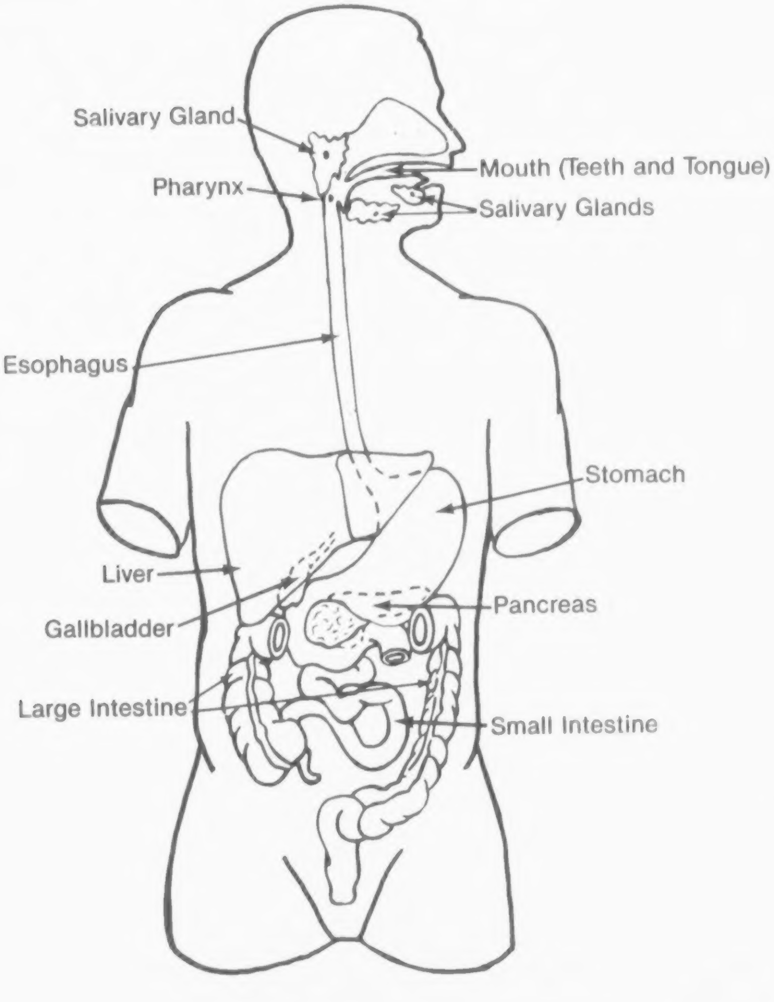
INFORMATION SHEET

II. Functions of the digestive system

- A. Breaks down food in preparation for absorption by the body
- B. Absorbs broken down food
- C. Discharges wastes resulting from digestion

III. Organs of the alimentary canal (Figure 1)

FIGURE 1


Salivary Gland
Mouth (Teeth and Tongue)
Pharynx
Salivary Glands
Esophagus
Stomach
Liver
Pancreas
Gallbladder
Large Intestine
Small Intestine

INFORMATION SHEET

IV. Functions of organs of the alimentary canal

A. Primary organs

1. Mouth — Begins the breakdown of food physically with teeth and tongue, and chemically with saliva, and moves food on to pharynx
2. Pharynx — Acts as a passageway for air from nasal cavity to larynx and for food from mouth to esophagus, and acts as a resonating cavity for voice production
3. Esophagus — Acts as a passageway for food from pharynx to stomach
4. Stomach — Connects esophagus to small intestine, secretes gastric juices that aid in digestion of food, and serves as a temporary receptacle for food while it undergoes certain mechanical and chemical processes that change food to chyme
5. Small intestine — Receives bile and pancreatic juices, and produces an intestinal hormone that stimulates associated digestive organs to produce their secretions; does greatest amount of digestion and absorption of food
6. Large intestine — Reabsorbs water and discharges digestive wastes

B. Accessory organs

1. Teeth — Chew, crush, and grind food
2. Tongue — Permits speech and taste, forces food between teeth, and moves food through mouth
3. Salivary glands — Secrete saliva that lubricates food, making it easier to chew and swallow; contains digestive juices that act upon carbohydrates and soften food
4. Pancreas — Produces pancreatic juice and insulin that aid in metabolism
5. Liver — Produces bile, stores glycogen, regulates the changing of glucose, stores iron and certain vitamins, and changes protein into urea for elimination
6. Gallbladder — Stores and concentrates bile and contracts to eject bile into small intestine when needed

V. Characteristics of structures of the mouth

A. Mouth is nearly oval-shaped cavity enclosed by cheeks and lips

INFORMATION SHEET

B. Roof of mouth is formed by the hard and soft palate

1. Hard palate consists of hard portion in front and aids in speech production

2. Soft palate is a movable fold of mucous membrane in back of mouth that prevents passage of food to nose

C. Most of the floor of the mouth is formed by the tongue

D. Mouth contains teeth set in sockets called *alveolar processes*

(NOTE: Each socket is called an *alveoli*.)

1. Each socket is lined with periodontal membrane, which attaches teeth to socket and is a source of nourishment

2. Sockets are covered by gums, dense connective tissue covered by mucous membrane

3. Two sets of teeth develop during life

   a. Twenty deciduous teeth (baby teeth) appear between 6 months to 1 year

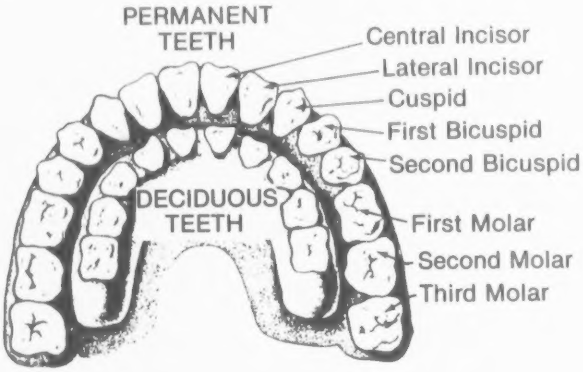
   b. Thirty-two permanent teeth replace deciduous teeth and appear between ages 6 and 17 years

   (NOTE: The last to appear are the wisdom teeth, or third molars, usually about the seventeenth year.)

4. The mouth contains three pairs of salivary glands

VI. Classes of teeth and their functions (Figure 2)

EXAMPLE: FIGURE 2


PERMANENT TEETH
Central Incisor
Lateral Incisor
Cuspid
First Bicuspid
Second Bicuspid
DECIDUOUS TEETH
First Molar
Second Molar
Third Molar

INFORMATION SHEET

A. Incisors (8) — Adapted for biting food

B. Cuspids (4) — Adapted for biting and tearing food

C. Bicuspids (8 premolars) — Adapted for grinding food

D. Tricuspids (12 molars) — Adapted for crushing food

VII. Salivary glands

A. Parotid — Largest glands located under and in front of each ear; secrete clear, watery serous fluid and an enzyme called *amylase*

(NOTE: This is the gland that becomes infected in the condition known as mumps.)

B. Submandibular (submaxillary) — Located in posterior part of floor of mouth; secrete primarily serous fluid with some mucus

C. Sublingual — Located in anterior part of floor of mouth under tongue; secrete primarily thick mucus

VIII. Characteristics of the stomach

A. Is an elongated pouch in upper left quadrant between esophagus and small intestine

B. Size varies with sex and other factors

(NOTE: The female stomach is smaller and more slender than the male stomach.)

C. Can hold up to two quarts of food until it is ready to be received into the small intestine

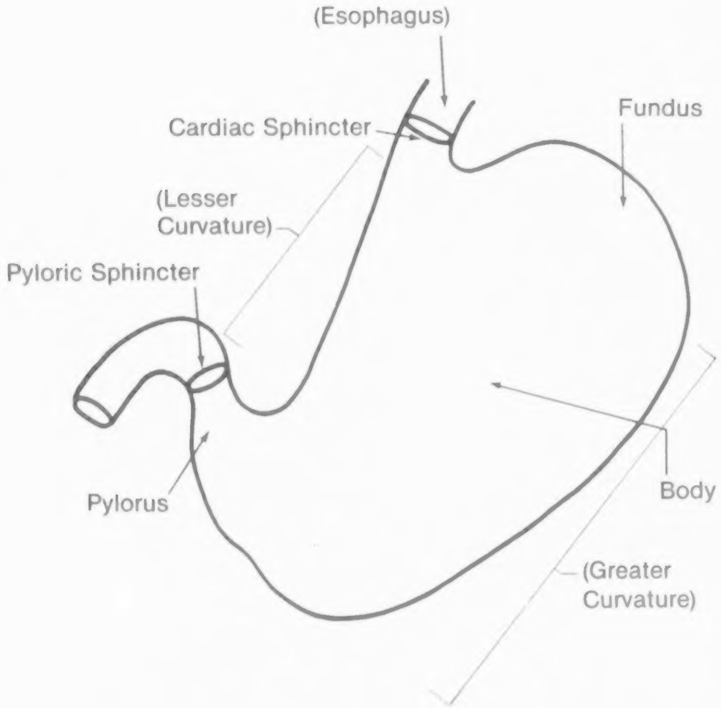
D. Dilates according to amount of food ingested

E. When not distended, the mucous coat lies in folds known as *rugae*

INFORMATION SHEET

IX. Sections of the stomach (Figure 3)

FIGURE 3


(Esophagus)
Fundus
Cardiac Sphincter
(Lesser Curvature)
Pyloric Sphincter
Pylorus
Body
(Greater Curvature)

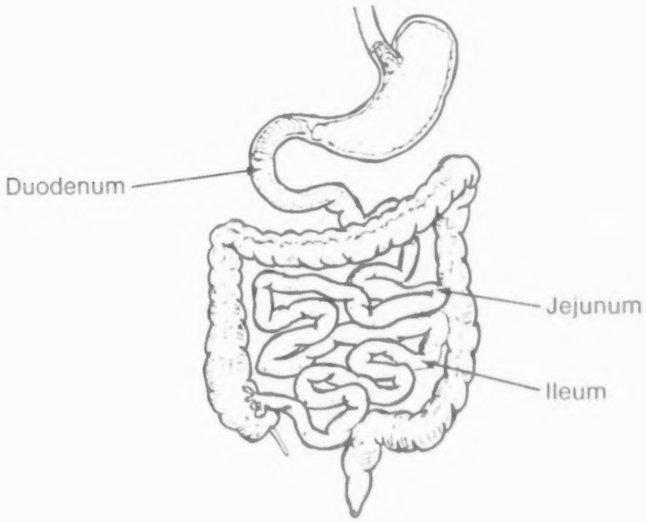
INFORMATION SHEET

X. Divisions of the small and large intestines

A. Small intestine (Figure 4)

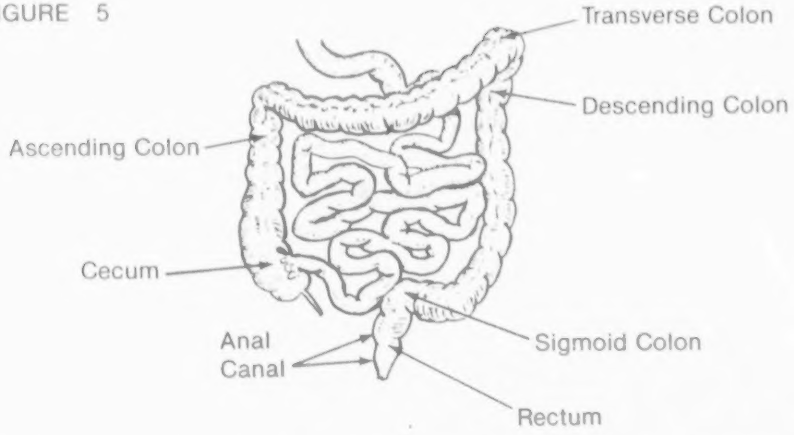
(NOTE: Although the small intestine is a continuous tube, it has been divided into three portions for locational purposes.)

FIGURE 4


Duodenum
Jejunum
Ileum

B. Large intestine (Figure 5)

FIGURE 5


Transverse Colon
Descending Colon
Ascending Colon
Cecum
Anal Canal
Sigmoid Colon
Rectum

Figures 4 and 5 adapted by permission from Myrna Weber LaFleur and Winifred K. Starr, *Exploring Medical Language*, St. Louis, 1985, The C.V. Mosby Co.

INFORMATION SHEET

XI. Characteristics of the small and large intestines

- A. Small intestine
  - 1. Duodenum
    - a. Attaches to pyloric end of stomach and is about 10 feet long
    - b. Is the shortest and broadest part of small intestine
    - c. Is the most common site for ulcers
  - 2. Jejunum
    - a. Is located in upper central part of abdomen
    - b. Is middle portion of small intestine, extending about 8 feet from duodenum
  - 3. Ileum
    - a. Is lower portion of small intestine, extending about 12 to 15 feet from jejunum
    - b. Ends at ileocecal valve, where it joins the colon at a right angle

      (NOTE: The opening of the ileoceacal valve is guarded by a sphincter muscle that prevents the return of material that has been discharged into the large bowel.)
- B. Large intestine
  - 1. Cecum
    - a. Is first 2 or 3 feet of large intestine
    - b. Contains worm-shaped diverticulum (appendix) which is 3 to 6 inches (7-16 cm) long

      (NOTE: The function of the appendix is not known.)
    - c. Has openings from ileum, colon, and appendix
  - 2. Colon
    - a. Is about 5 feet long and extends from iliocecal junction to rectum
    - b. Is a continuous tube but is subdivided into four portions: ascending, transverse, descending, and sigmoid colon

INFORMATION SHEET

3. Rectum
    a. Is last 7 or 8 inches (17-21 cm) of the gastrointestinal tract
    b. Is located between sigmoid colon and anal canal
4. Anal canal
    a. Is last 1 to 1 1/2 inches (2-4 cm) of the large intestine
    b. Ends at opening called the *anus*, which contains smooth internal and striated external sphincter muscles

       (NOTE: These muscles are kept closed except for defecation.)
    c. Has mucous lining arranged in numerous vertical folds known as *rectal columns* or Houston valves, each of which contains an artery and a vein

       (NOTE: Hemorrhoids are enlargements of veins in the anal canal.)

XII. Ways of maintaining a healthy digestive system

A. Do not smoke
B. Avoid heavy lifting
C. Avoid straining during bowel movements
D. Avoid prolonged use of laxatives
E. Limit intake of fats, sweets, spicy foods, alcohol, and caffeine
F. Eat a balanced diet
G. Eat a diet high in fiber
H. Drink plenty of fluids
I. Observe regular mealtimes
J. Brush and floss teeth after meals
K. Empty bowels regularly and promptly
L. Exercise regularly
M. Learn to manage stress
N. Visit your physician for an annual physical after age 25

INFORMATION SHEET

XIII. Health occupations related to the digestive system (Table 1)

TABLE 1

Occupation	Education	Duties
DENTAL		
Dental assistant	One-year program for a certificate; two-year program for an associate degree	Performs chairside assistance and related office and laboratory procedures under the direction and supervision of the dentist
Dental hygienist	Minimum of two academic years of full-time study, and can attend two-year or four-year program for either an associate or a baccalaureate degree	Serves as an oral health clinician and educator to help the public develop and maintain optimal oral health; may perform preventative and therapeutic direct-patient services under the supervision of the dentist
Dental laboratory technician	At least two years in length, usually an associate degree	Performs laboratory techniques and procedures in the manufacture of prosthetic appliances for the replacement, movement, or stabilization of natural teeth, under work authorized by dentists
Dental or medical receptionist/secretary	Secretarial courses with medical and dental terminology	Transcribes dictation for patient's medical records, schedules patients' appointments, places telephone calls, takes messages, keeps and balances the day sheet, orders office supplies, files, and may perform some of the routine functions such as weighing patients
Endodontist	Six to ten years after high school, depending on the specialty	Deals with causes, diagnosis, prevention, and treatment of diseases of the pulp in the central cavity of the tooth and of other dental tissues that affect the health of the teeth

INFORMATION SHEET

TABLE 1 (Continued)

Occupation	Education	Duties
Dental (Continued)		
Orthodontist	Six to ten years after high school	Treats problems related to irregular dental development, missing teeth, and other abnormalities in order to establish normal function and appearance
Pediatric dentist	as above	Responsible for oral health of children from birth through adolescence, as well as for the care of special patients beyond the age of adolescence who demonstrate emotional, physical, or mental problems
Periodontist	as above	Diagnoses and treats diseases that affect the oral mucous membranes as well as other structures that surround and support the teeth
Prosthodontist	as above	Replaces natural teeth and associated structures with fixed or removable structures
Public health dentist	Six to ten years after high school, depending on the specialty	Controls and prevents dental disease; promotes oral health through organized community efforts
DIAGNOSTIC		
Histotechnologist	One-year to two-year program	Prepares microscopic slides from tissue specimens, which are used by the pathologist in histopathologic examination and diagnosis
Laboratory assistant	Completion of an accredited clinical laboratory assistant program	Performs routine laboratory procedures that do not require interpretation or judgment decisions

INFORMATION SHEET

TABLE 1 (Continued)

Occupation	Education	Duties
Diagnostic (Continued)		
Medical laboratory technician	Certificate from a one-year program or associate degree	Person certified in clinical laboratory sciences who performs the more common analyses necessary for most tests offered by the laboratory and who assists in problem-solving activities
Medical technologist	Baccalaureate degree	Person trained in the clinical laboratory sciences; may be a generalist who works in any of the various departments of the medical laboratory, or a specialist concentrating in one or more laboratory fields such as immunology or microbiology
Pathologist	Four years of medical school and three years of training in anatomic pathology or clinical pathology or two years in both	A physician trained in pathology, the field of medicine that deals with the study of causes, mechanisms, development, structural and physical changes, diagnosis, and prognosis of disease; practices chiefly in the laboratory and has relatively little patient contact
Radiologic technologist	Certificate course in general hospital, associate degree course in junior college, or bachelor's degree course in four-year university; all take same certification test	Specializes in radiography, radiation therapy, and/or nuclear medicine under the direction of a physician
Radiologist	Four years of approved postgraduate training after completion of medical school	Specializes in the use of x rays and other ionizing and non-ionizing radiation in the diagnosis and treatment of disease

INFORMATION SHEET

TABLE 1 (Continued)

Occupation	Education	Duties
DIETETICS		
Dietetic assistant	Usually 90 hours theory and a minimum of 150 hours clinical	Under supervision of dietitian or dietetic technician, writes menus following dietetic specifications, coordinates food service to patients, orders supplies, maintains sanitation, and oversees the work of food service employees in health care facilities
Dietetic technician	Associate degree in a dietetic technician program	Provides nutritional care of individuals in health care facilities by assisting with the planning, implementation, and evaluation of food programs, working with both the food service supervisor and the dietitian, and training and supervising dietary aides
Dietitian	Baccalaureate degree in dietetics, nutrition, food service management, institutional management, or a related area	Applies principles of nutrition and management in administering institutional food service programs, plans special diets at physicians' requests, and instructs individuals and groups in the application of nutritional principles in the selection of food
MEDICAL/SURGICAL		
General surgeon	Three to eight years beyond completion of medical school	Specializes in operative procedures, determines the necessity and appropriateness of surgery, and supervises a patient's preoperative and postoperative care

INFORMATION SHEET

TABLE 1 (Continued)

Occupation	Education	Duties
Medical/Surgical (Continued)		
Oral pathologist	Six to ten years after high school	Deals with the nature of the diseases of the mouth through the study of their causes, processes, and effects; as a diagnostician, does not necessarily treat diseases directly, but may counsel other specialists who do provide treatment
Oral surgeon	as above	Diagnoses and performs surgical and related services dealing with disease, injuries, and defects of the jaws and associated structures
Proctologist	Additional training after completion of medical school	A physician who specializes in disorders of the rectum and anus
Surgeon's assistant	Two years of college prior to entering the surgeon's assistant program, which is two years in length	A technician who provides patient services under the supervision and responsibility of a surgeon; may be involved with patients of the surgeon in any medical setting for which the surgeon is responsible

DIGESTIVE SYSTEM
UNIT VII

ASSIGNMENT SHEET #1 — ANSWER STUDY QUESTIONS ABOUT THE DIGESTIVE SYSTEM

NAME ______________________________ SCORE ______________

Answer the following study questions to review your knowledge of the digestive system and to help you prepare for the unit test. You may consult additional references.

Each of the following multiple choice study questions contains four possible answers. Choose the answer that best completes each statement or question and write the correct numbers in the blanks. After you have completed the assignment sheet, determine your score using the answers provided by your instructor.

_____A. Pancreatic juice is emptied from the pancreas by way of a duct into the

1. Duodenum
2. Ileum
3. Jejunum
4. Stomach

_____B. When a patient has the mumps, which glands become swollen?

1. Parotid
2. Sublingual
3. Submaxillary
4. Thyroid

_____C. The serous membrane that covers the surface of most of the abdominal organs and lines the abdominal cavity is the

1. Mesentary
2. Omentum
3. Perineum
4. Peritoneum

_____D. The large intestine is referred to as the

1. Colon
2. Duodenum
3. Ileum
4. Vermiform

_____E. The muscular digestive tube extending through the body is called the

1. Alimentary canal
2. Gullet
3. Intestinal tube
4. Mesentary canal

ASSIGNMENT SHEET #1

_____F. The parotid glands secrete

1. Bile
2. Hormones
3. Mucus
4. Serous fluid

_____G. The normal liver manufactures fibrogen. When the liver is diseased, there is a decrease of this substance in the blood, and the patient must be watched carefully for

1. A drop in blood pressure
2. Cyanosis (the skin appearing blue)
3. Elevation of body temperature
4. Signs of bleeding internally or externally

_____H. The absorption of most nutritive elements obtained from digested food takes place in the

1. Colon
2. Large intestine
3. Small intestine
4. Stomach

_____I. The gallbladder

1. Contains glands that secrete digestive enzymes
2. Produces bile
3. Stores and concentrates bile
4. Stores sugar as glycogen

_____J. Which of the following is an accessory organ of digestion?

1. Esophagus
2. Large intestine
3. Salivary glands
4. Stomach

_____K. There are glands in the walls of the stomach that secrete substances that aid in digestion. These substances include

1. Hormones
2. Hydrochloric acid
3. Saliva
4. Vitamins

ASSIGNMENT SHEET #1

_____L. The appendix is attached to the

1. Cecum
2. Duodenum
3. Ileum
4. Jejunum

_____M. Secretions that chemically aid in digestion are

1. Adrenalin
2. Enzymes
3. Hormones
4. Vitamins

_____N. The small intestine includes the

1. Cecum
2. Duodenum
3. Rectum
4. Sigmoid colon

_____O. A function of the stomach is to

1. Begin digestion of fats
2. Reabsorb fluids
3. Secrete bile
4. Store food until it can be partially digested

_____P. The ileocecal valve acts to

1. Allow food to pass into the duodenum
2. Allow passage of fecal matter into the rectum
3. Prevent backflow of matter into the small intestine
4. Prevent passage of material into the large intestine

_____Q. The sphincter muscle located at the lower end of the stomach is called the

1. Cardiac sphincter
2. Duodenal sphincter
3. Ileocecal sphincter
4. Pyloric sphincter

_____R. *Bolus* is the medical term for

1. A small lump or mass of chewed food
2. Gas in the digestive tract
3. The nearly liquid mixture of partly digested food and digestive enzymes found in the stomach and small intestine
4. The thick yellow or greenish fluid secreted by the liver

ASSIGNMENT SHEET #1

_____S. The combination of gastric juice and food is known as

1. Bile
2. Chyme
3. Flatus
4. Omentum

_____T. The mucous lining of the small intestine is greatly increased in area by tiny, velvet, fingerlike projections called

1. Alveoli
2. Cilia
3. Rugae
4. Villi

_____U. The largest gland in the body is the

1. Gallbladder
2. Liver
3. Pancreas
4. Parotid

_____V. Carbohydrate digestion is initiated in the

1. Gallbladder
2. Mouth
3. Pancreas
4. Stomach

_____W. Temporary baby teeth are known as

1. Cuspids
2. Deciduous teeth
3. Eye teeth
4. Permanent incisors

_____X. An enzyme is a

1. Complex carbohydrate capable of inducing chemical change in another substance
2. Complex protein capable of inducing chemical change in another substance
3. Multiple vitamin capable of inducing chemical change in another substance
4. Saturated fat capable of inducing chemical change in another substance

_____Y. Pancreatic juice is important because it aids in the digestion of

1. All food substances
2. Amino acids
3. Carbohydrates
4. Fatty acids

ASSIGNMENT SHEET #1

_____Z. The openings of the salivary glands are located in the

1. Mouth
2. Pancreas
3. Small intestine
4. Stomach

_____AA. The rhythmic wave of contractions that moves food along the digestive tract is called

1. Absorption
2. Metabolism
3. Peristalsis
4. Peritoneum

_____BB. Water is absorbed from the digestive tract primarily in the

1. Esophagus
2. Large intestine
3. Small intestine
4. Stomach

_____CC. Mechanical digestion of food requires tongue action because the tongue

1. Breaks food into smaller particles against the hard palate so that saliva can cover each particle
2. Moves food between the teeth and mixes food with saliva
3. Provides taste stimulation
4. Supplies a lubricating secretion

_____DD. The crown of a tooth can be described as that part of the tooth that

1. Is above the gum line
2. Is below the gum line
3. Protects the pulp
4. Provides nourishment to the tooth

_____EE. Gastric juice is secreted in the

1. Liver
2. Mouth
3. Small intestine
4. Stomach

_____FF. The shape of the front teeth best suits them for the job of

1. Chewing
2. Cutting and dividing
3. Grinding
4. Mashing

ASSIGNMENT SHEET #1

_____GG. The flat edges of the back teeth enable the individual to rub the teeth back and forth in a _____________ action

1. Circular
2. Grinding
3. Rotary
4. Scissors

_____HH. The teeth are set in sockets called

1. Alveolar processes
2. Gingiva
3. Gums
4. Villiar processes

_____II. Three accessory organs that aid in the digestion of food but do not form the digestive tract itself are

1. Appendix, cecum, and rectum
2. Cecum, colon, and sigmoid
3. Pancreas, liver, and gallbladder
4. Pharynx, esophagus, and stomach

_____JJ. The structure(s) of the mouth that allows taste, helps in swallowing, and aids in chewing and speech is called the

1. Epiglottis
2. Taste buds
3. Teeth
4. Tongue

_____KK. The structure(s) in the mouth that functions to initiate the physical breakdown of food is called the

1. Amylase enzyme
2. Cheeks
3. Salivary glands
4. Teeth

_____LL. The three divisions of the small intestine are the

1. Appendix, cecum, and colon
2. Ascending, transverse, and descending colon
3. Duodenum, jejunum, and ileum
4. Sigmoid, rectum, and anal canal

_____MM. The name of the duct that carries bile from the liver to the cystic duct is the

1. Common bile duct
2. Hepatic duct
3. Pancreatic duct
4. Wharton duct

ASSIGNMENT SHEET #1

____NN. When not distended, the mucous coat of the stomach lies in folds called

1. Alveoli
2. Cilia
3. Rugae
4. Villi

____OO. The mouth, esophagus, intestines, stomach, and ____________ are the main organs of the alimentary canal

1. Gallbladder
2. Liver
3. Pancreas
4. Pharynx

____PP. The shortest and broadest part of the small intestine is the

1. Cecum
2. Duodenum
3. Ileum
4. Jejunum

____QQ. When bile ducts are obstructed and bile is absorbed by the blood stream, the condition is known as

1. Cyanosis
2. Hepatitis
3. Jaundice
4. Peristalsis

____RR. A proctologist

1. Applies principles of nutrition and management in administering institutional food service programs
2. Deals with causes, diagnosis, prevention, and treatment of diseases of the tooth
3. Specializes in disorder of the rectum and anus
4. Treats problems related to irregular dental development

____SS. The sublingual salivary glands are located

1. In anterior part of floor of mouth under tongue
2. In posterior part of cheeks
3. In posterior part of floor of mouth
4. Under and in front of each ear

ASSIGNMENT SHEET #1

____TT. Another name for gums is

1. Cilia
2. Gingiva
3. Frenulum
4. Uvula

____UU. How many baby or deciduous teeth are there?

1. 15
2. 20
3. 23
4. 32

____VV. How many permanent teeth are there?

1. 15
2. 20
3. 23
4. 32

____WW. Which of the following is *not* a function of the digestive system?

1. Absorbing broken down food
2. Breaking down food in preparation for absorption by the body
3. Discharging wastes resulting from digestion
4. Manufacturing and excreting urine

____XX. Which of the following health occupations deals with the replacement of natural teeth and associated structures?

1. Endodontist
2. Orthodontist
3. Periodontist
4. Prosthodontist

____YY. Another term for *chewing* is

1. Expectoration
2. Mandibulation
3. Mastication
4. Regurgitation

REPRODUCTIVE SYSTEM
UNIT VIII

UNIT OBJECTIVE

After completing this unit, the student should be able to identify the structures and describe the function of the reproductive system. The student will show this ability by completing the unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Select correct terms associated with the reproductive system, given their definitions.
2. List functions of the reproductive system.
3. Complete statements concerning the development of the human reproductive organs.
4. List secondary sex characteristics.
5. Select terms associated with the male reproductive system.
6. Identify structures of the male reproductive system.
7. List the functions of the male external and internal reproductive organs.
8. Select terms associated with the female reproductive system.
9. Identify structures of the female reproductive system.
10. Match female internal and external reproductive organs to their correct functions.
11. Match the stages of a 28-day menstrual cycle to their correct descriptions.
12. Describe physiological changes that occur during menopause.
13. Describe education and duties of health occupations related to the reproductive system.

REPRODUCTIVE SYSTEM
UNIT VIII

INFORMATION SHEET

I. Terms and definitions

   A. **Climacteric** — Period that marks the cessation of reproductive function in the female or diminished sexual activity in the male

   B. **Fertilization** — Process by which the sperm unites with the ovum

   C. **Gonad** — Generic terms referring to both female and male sex glands

   D. **Perineum** — Area between external genitalia and anus

   E. **Puberty** — Period in life during which a person becomes functionally capable of reproduction

   F. **Pubic** — Pertaining to the os pubis, the anterior bone of the pelvis

   (NOTE: Pubic *area* refers to the area of the os pubis.)

   G. **Reproduction** — Process by which a living organism produces a new individual of the same kind

   H. **Reproductive system** — System of the body involved in the creation of offspring

II. Functions of the reproductive system

   A. Perpetuation of the human species

   B. Sexual gratification

   C. Secretion of hormones

III. Development of human reproductive organs

   A. Development before birth

      1. For approximately the first 2 months of embryonic life, no structural differentiation into sexes is evident

      2. By the end of the third month, the sex of the fetus is clearly distinguishable

   B. Development after birth

      1. Prepubescence

         a. At birth the testes contain thousands of immature spermatocytes and the ovaries contain thousands of primitive germ cells

         b. From birth to the age of puberty, the reproductive organs grow with the rest of the body, but are nonfunctional

INFORMATION SHEET

2. Puberty
   a. Puberty is indicated in the male by the production of functional spermatozoa and in the female by the onset of ovulation and menstruation
   b. Puberty is also marked by the gradual appearance of both physical and mental changes
   c. Physical changes are referred to as secondary sex characteristics
3. Postpubescence
   a. Changes that begin at puberty are not accomplished at once, but extend over a long period of time; the years during which they are taking place are known as the period of adolescence
   b. The reproductive organs continue to function for many years; the length of time varies between individuals and sexes
   c. The female gonads usually become inactive (no longer produce gametes) at about the age of 45

   (NOTE: This also can vary several years in either direction with different individuals.)

   d. The male gonads usually function until late in life, or, in many cases, even throughout life

IV. Secondary sex characteristics
   A. In the male
      1. Increase in size of larynx, causing a lower-pitched voice
      2. Rapid growth of external genitalia
      3. Growth of hair on the face, pubis, axilla, and other parts of the body
      4. Development of firmer musculature, broad shoulders, and narrow hips
   B. In the female
      1. Breast development
      2. Broadening of the hips
      3. Growth of hair on the pubis and axilla
      4. Onset of menstruation

V. Terms and definitions associated with the male reproductive system
   A. **Circumcision** — Surgical removal of the prepuce
   B. **Glans penis** — Head of penis

INFORMATION SHEET

C. **Prepuce** — Foreskin, or fold of skin over the glans penis in the male

D. **Scrotum** — External pouch that contains the testes

E. **Semen** — Thick, white secretion of the male reproductive glands

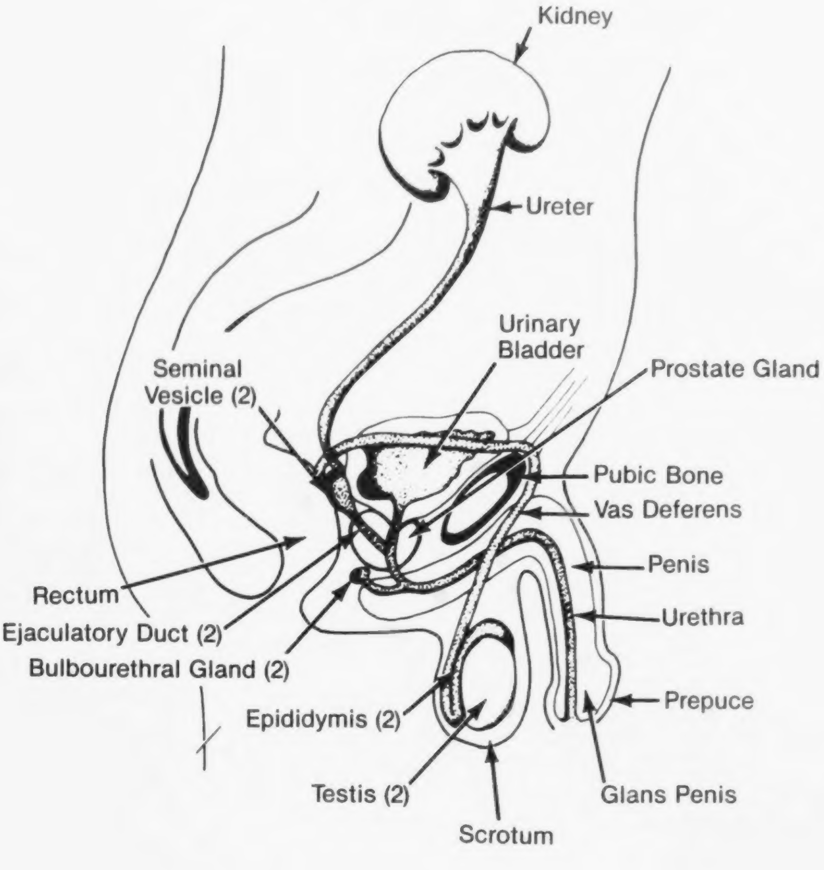
F. **Spermatic cord** — Cord suspending the testes; composed of veins, arteries, lymphatics, nerves, and vas deferens

G. **Spermatozoa** — Mature male sex cell containing 23 chromosomes

H. **Viscid** — Thick, sticky

VI. Structures of the male reproductive system (Figure 1)

FIGURE 1


Kidney
Ureter
Urinary Bladder
Seminal Vesicle (2)
Prostate Gland
Pubic Bone
Vas Deferens
Penis
Rectum
Urethra
Ejaculatory Duct (2)
Bulbourethral Gland (2)
Prepuce
Epididymis (2)
Testis (2)
Glans Penis
Scrotum

INFORMATION SHEET

VII. Functions of the male external and internal reproductive organs

- A. External male organs
    1. Scrotum — Protects testes; regulates and maintains favorable temperature for sperm production
    2. Testes — Produce sperm and testosterone

       (NOTE: The singular form of *testes* or *testicles* is *testis*.)
    3. Epididymides — Collect and store sperm while maturing; conduct sperm to outside

       (NOTE: The singular form of *epididymides* is *epididymis*.)
    4. Vas deferens — Transports sperm from the testes to the urethra

       (NOTE: The vas deferens is also called *ductus deferens*.)
    5. Penis and urethra — Carry semen into vagina during copulation; carry urine from bladder
- B. Internal male organs
    1. Seminal vesicles — Contribute essential components to semen
    2. Prostate gland — Secretes alkaline fluids that enhance sperm mobility; contracts smooth muscles to aid in ejaculation

       (NOTE: Men middle-aged and older should have the prostate gland checked periodically for enlargement and tumors. The exam is quite simple and is performed by a physician using an exam glove and lubricant. Sometimes a smear is taken for examination.)
    3. Bulbourethral glands — Secrete viscid alkaline fluid that removes urine residue; secrete mucus for lubrication

       (NOTE: Bulbourethral glands are also known as *Cowper's glands*.)
    4. Vas deferens — Transports sperm from the testes to the urethra

VIII. Terms and definitions associated with the female reproductive system

- A. **Broad ligament** — Fold of peritoneum that supports the uterus
- B. **Endometrium** — Mucous membrane lining of the uterus
- C. **Graafian follicle** — Thin-walled cavity in the ovary enclosing a developing ovum
- D. **Lactiferous ducts** — Ducts that convey milk
- E. **Menarche** — Beginning of menstruation
- F. **Menopause** — Period in life which marks the permanent cessation of menstruation

INFORMATION SHEET

G. **Menstruation** — Periodic discharge of a bloody fluid from the uterus

H. **Ovum** — Female sex cell containing 23 chromosomes

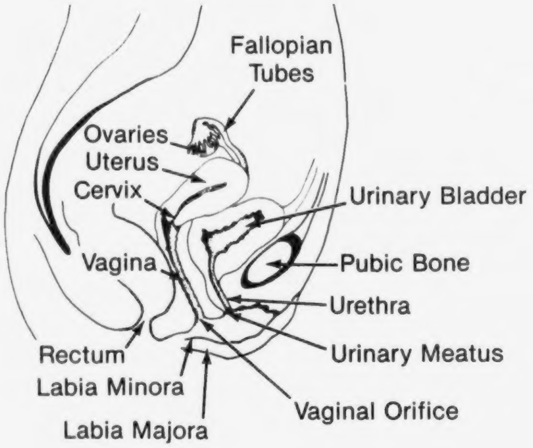
(NOTE: The plural of ovum is *ova*.)

I. **Vulva** — External female genitalia

IX. Structures of the female reproductive system

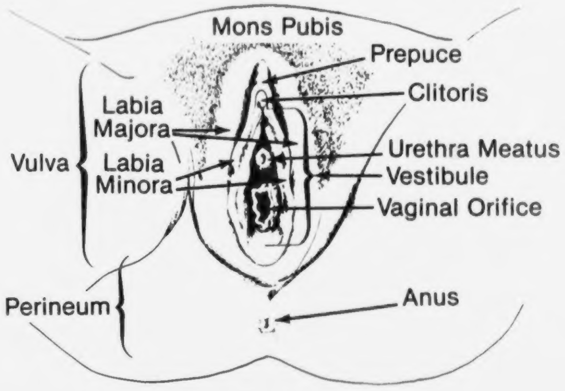
A. Internal organs and adjacent structures (Figure 2)

FIGURE 2


Fallopian Tubes
Ovaries
Uterus
Cervix
Urinary Bladder
Vagina
Pubic Bone
Urethra
Rectum
Urinary Meatus
Labia Minora
Vaginal Orifice
Labia Majora

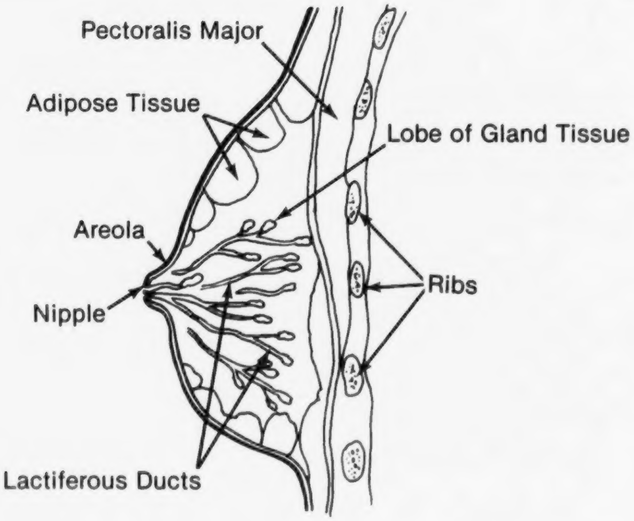
B. External organs and adjacent structures (Figures 3 and 4)

FIGURE 3


Mons Pubis
Prepuce
Clitoris
Labia Majora
Urethra Meatus
Vulva
Labia Minora
Vestibule
Vaginal Orifice
Perineum
Anus

INFORMATION SHEET

FIGURE 4


Pectoralis Major
Adipose Tissue
Lobe of Gland Tissue
Areola
Nipple
Ribs
Lactiferous Ducts

X. Functions of female external and internal reproductive organs

A. External female organs

1. Mammary glands (breasts) — Lactation (secretion of milk)

   (NOTE: Lactiferous ducts carry secretions from many lobules to one opening in nipple.)

2. Mons pubis — Protection of pubic bone
3. Labia majora — Protection of labia minora
4. Labia minora — Protection of the vestibule
5. Clitoris — Sexual excitation
6. Urethral orifice — Regulation of urine flow
7. Vaginal orifice — Outlet for menstruation; female organ of intercourse; birth canal
8. Perineum — Mass of tissue critical for pelvic support

   (NOTE: The term perineum is clinically used to mean the area between the vaginal orifice and the anus. The full use of the term however, includes all structures between the mons pubis and the coccyx.)

INFORMATION SHEET

B. Internal female organs

1. Vagina — Reception of the penis during copulation; passageway for the infant during birth
2. Uterus — Menstruation; during pregnancy, protection and nourishment of fertilized ovum until it becomes a viable infant
3. Fallopian tubes (two) — Movement of ova from ovaries to uterus; fertilization usually takes place in the distal third of the tube

   (NOTE: These are known as *uterine tubes*, *ova ducts*, or *salpinx*.)
4. Ovaries (two) — Production of hormones and an ovum, usually once a month from alternate ovaries
5. Bartholin's and Skene's glands — Secretion of lubricating fluid

XI. Stages of the 28-day menstrual cycle (Figure 5)

(NOTE: Twenty-eight days is the average length of a menstrual cycle, but a normal cycle may vary in length according to the individual. The days indicated in this section are approximate points in a 28-day cycle.)

EXAMPLE:

FIGURE 5

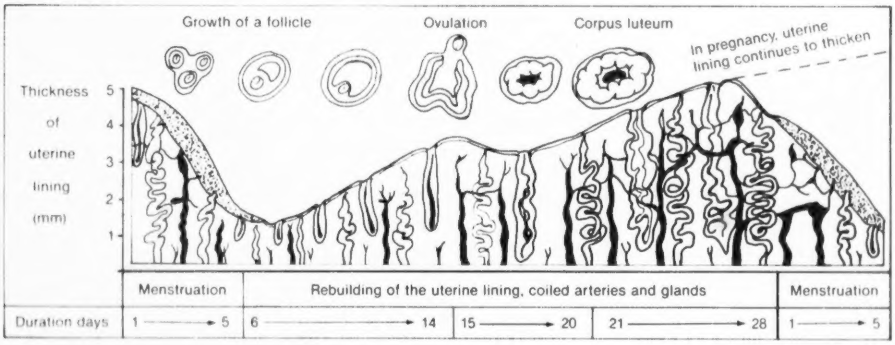

Growth of a follicle
Ovulation
Corpus luteum
In pregnancy, uterine lining continues to thicken
Thickness of uterine lining (mm)
5
4
3
2
1
Menstruation
Rebuilding of the uterine lining, coiled arteries and glands
Menstruation
Duration days
1 → 5
6 → 14
15 → 20
21 → 28
1 → 5

Illustration from *Pregnancy in Anatomical Illustrations*, 1984 edition. Courtesy of the copyright owner © Carnation Company, Los Angeles, California, 1962.

A. Days 1-5 — Usually menstruation occurs, and one of the many ova enclosed in a Graafian follicle begins to mature

B. Days 5-13 — During this period of ovum maturation, the Graafian follicle produces estrogen under the control of the pituitary gland, and the endometrium repairs and begins to thicken

INFORMATION SHEET

C. By day 14 — Ovulation occurs; Graafian follicle ruptures, and ovum is released into the abdominal cavity; fringed end of fallopian tube brings ovum into tube, where it is propelled to uterus

(NOTE: If an individual's cycle is 30 days long, ovulation would occur by day 15. If fertilization occurs, the ovum is penetrated by a sperm usually midway through the fallopian tube.)

D. Days 15-20 — Corpus luteum forms, secreting progesterone; endometrium thickens

(NOTE: If fertilization does not occur, the corpus luteum and its secretions diminish; the blood supply to the endometrium decreases; and the uterine capillaries begin to bleed as the endometrium sloughs off.)

E. Days 21-28 — Hormone production decreases; endometrium shrinks

XII. Physiological changes that occur during menopause

A. Production of estrogen diminishes

B. Ovaries atrophy and become scar tissue because of lack of hormonal support

C. Uterus, fallopian tubes, vagina, and vulva atrophy because of lack of estrogen

XIII. Health occupations related to the reproductive system (Table 1)

TABLE 1

Occupation	Education	Duties
Nurse-Midwife	Completion of nursing school plus certificate, master's, refresher, or residency courses	Assumes responsibility for the care of the apparently normal obstetrical patients during pregnancy, labor, delivery, and the postnatal period
Obstetrician/Gynecologist	Residency of three to five years after completion of medical school	Treat disorders and diseases of the female reproductive tract Obstetrician assumes responsibility for the care of the woman before, during, and after pregnancy; gynecologist assumes care at all other times

REPRODUCTIVE SYSTEM
UNIT VIII

ASSIGNMENT SHEET #1 — LABEL STRUCTURES OF THE MALE REPRODUCTIVE SYSTEM

NAME ________________________________ SCORE ______________

To help you remember the location of the structures of the male reproductive system, complete this assignment sheet by labeling the parts in the following illustration. Place your answers in the blanks provided.

A. ______________________________

B. ______________________________

C. ______________________________

D. ______________________________

E. ______________________________

F. ______________________________

G. ______________________________

H. ______________________________

I. ______________________________

J. ______________________________

K. ______________________________

L. ______________________________

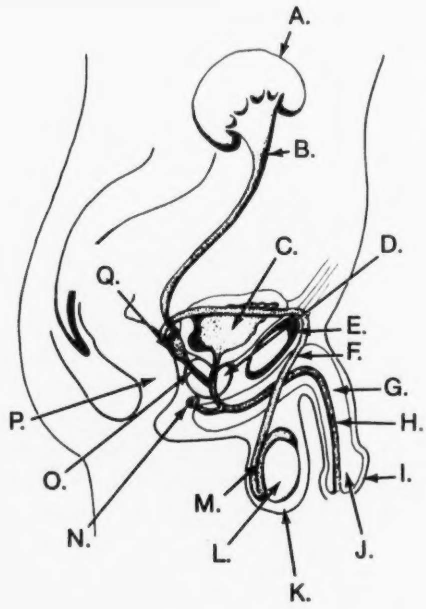
M. ______________________________

N. ______________________________

O. ______________________________

P. ______________________________

Q. ______________________________



REPRODUCTIVE SYSTEM
UNIT VIII

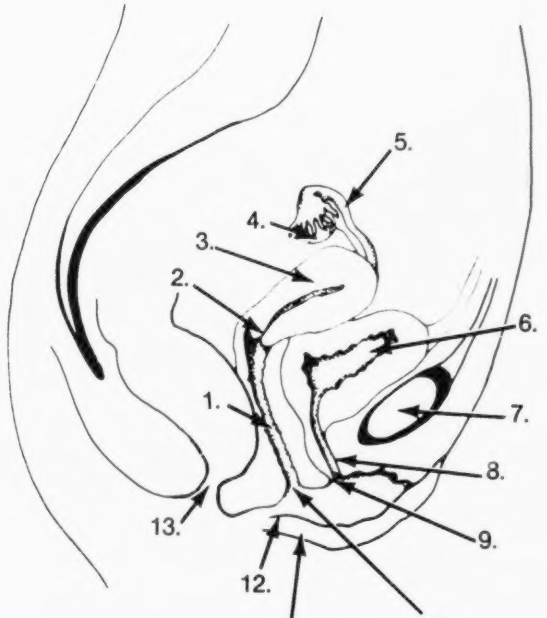
ASSIGNMENT SHEET #2 — LABEL STRUCTURES OF THE FEMALE REPRODUCTIVE ORGANS

NAME ______________________ SCORE ______________

In order to succeed in any health career, you must have a sound knowledge of anatomy and physiology. To assist you in reaching this goal, complete this assignment sheet. Label the parts in the following illustrations by writing the correct names in the blanks provided.

A.

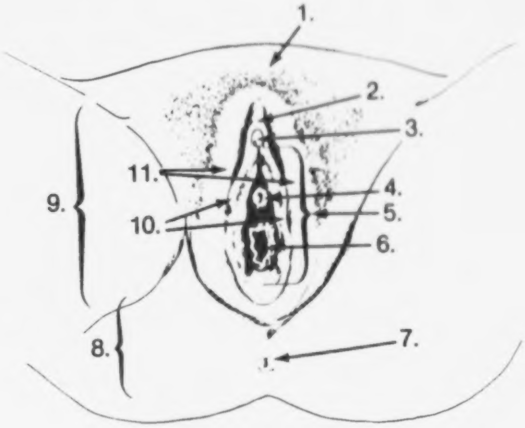
1. ______________________
2. ______________________
3. ______________________
4. ______________________
5. ______________________
6. ______________________
7. ______________________
8. ______________________
9. ______________________
10. ______________________
11. ______________________
12. ______________________
13. ______________________



ASSIGNMENT SHEET #2

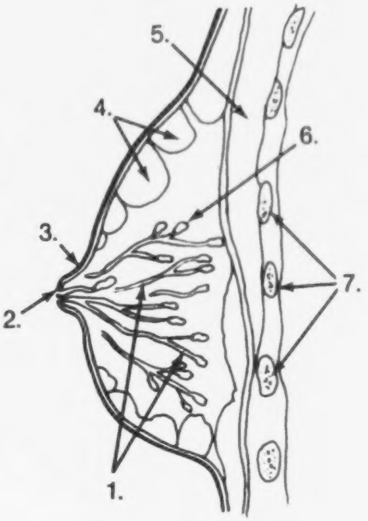
B.

1. ____________________
2. ____________________
3. ____________________
4. ____________________
5. ____________________
6. ____________________
7. ____________________
8. ____________________
9. ____________________
10. ____________________
11. ____________________


1.
2.
3.
11.
4.
9.
5.
10.
6.
8.
7.

C.

1. ____________________
2. ____________________
3. ____________________
4. ____________________
5. ____________________
6. ____________________
7. ____________________



REPRODUCTIVE SYSTEM
UNIT VIII

ASSIGNMENT SHEET #3 — COMPLETE STATEMENTS CONCERNING THE REPRODUCTIVE SYSTEM

NAME ______________________________ SCORE ______________

The questions in this assignment sheet are designed to help you review the information in the unit and to help you study for the test. Complete the following statements or questions by placing the correct numbers in the blanks. You may use additional references to find answers to the questions.

______A. The inner lining of the uterus is called the

1. Endometrium
2. Myometrium
3. Perineum
4. Peritoneum

______B. Menstruation depends primarily on

1. Circulating blood
2. Digestion
3. Hormone action
4. Intake of fluids

______C. Accessory glands of the female reproductive organs include

1. Bartholin's gland
2. Cowper's gland
3. Prostate
4. Vas deferens

______D. Fertilization occurs

1. In the uterine fundus
2. When several sperm penetrate the ovum
3. When the sperm are ejaculated into the vagina
4. When the union forms a new one-celled individual

______E. The penis

1. Constitutes the external genitals of the male
2. Is the copulatory organ
3. Stores the glands
4. Stores the semen

ASSIGNMENT SHEET #3

_____F. The male germ cell is called a

1. Spermatid
2. Spermatocyte
3. Spermatogonium
4. Spermatozoon

_____G. In the female, the external urinary meatus is located between the

1. Bladder and urethra
2. Clitoris and vaginal orifice
3. Perineum and anus
4. Vaginal orifice and perineum

_____H. One function of the ovaries is

1. Production of mucus for lubrication
2. Production of ova
3. Secretion of seminal fluid
4. To act as a receptacle for fertilized ovum

_____I. The muscular structure that forms the floor of the pelvis is called the

1. Mons pubis
2. Parietal muscle
3. Perineum
4. Peritoneum

_____J. The combination of ducts, nerves, and blood and lymph vessels extending from the scrotum and testes on each side through the abdominal wall is called the

1. Epididymis
2. Phimosis
3. Seminal vesicles
4. Spermatic cord

_____K. Ovulation is the process of

1. Beginning the menstrual flow
2. Fertilizing a mature ovum
3. Producing a mature ovum
4. Releasing a mature ovum

_____L. Progesterone is secreted by the

1. Adrenal cortex
2. Adrenal medulla
3. Ovary
4. Oviducts

ASSIGNMENT SHEET #3

______M. The hormone produced by the male gonads is

1. Estrogen
2. Estrona
3. Progesterone
4. Testosterone

______N. Spermatozoa are formed in the

1. Glans penis
2. Prepuce
3. Prostate gland
4. Testes

______O. The testes are normally situated in the

1. Abdomen
2. Inguinal canal
3. Prostate gland
4. Scrotum

______P. The single tube which conducts urine and sperm to the outside is the

1. Ejaculatory duct
2. Epididymis
3. Urethra
4. Vas deferens

______Q. What are the glands of reproduction called?

1. Gametes
2. Gonads
3. Morula
4. Zygotes

______R. Ovulation occurs on about what day in the 28-day menstrual cycle?

1. On the 10th day
2. On the 12th day
3. On the 14th day
4. On the 28th day

______S. The shedding of the functional layer of the endometrium is called

1. Climacteric
2. Graafian follicle
3. Menstruation
4. Ovulation

ASSIGNMENT SHEET #3

_____T. Menarche is

1. A climacteric period
2. Menopause
3. Onset of menstruation
4. Painful menstruation

_____U. The uterine tubes communicate most directly with the

1. Bladder
2. Ovary
3. Urethra
4. Uterus

_____V. The fertilized ovum normally implants itself in the wall of the

1. Fallopian tube
2. Ovary
3. Uterus
4. Vagina

_____W. The fold of loose skin at the end of the penis is called the

1. Epididymis
2. Prepuce
3. Urethra
4. Vas deferens

_____X. The most frequent site for cancer in the male reproductive system is the

1. Bulbourethral gland
2. Prostate
3. Seminal vesicles
4. Testicles

_____Y. Bleeding between menstrual periods is called

1. Dysmenorrhea
2. Menarche
3. Menorrhagia
4. Metrorrhagia

_____Z. The pigmented area around the nipples is called

1. Areola
2. Linea alba
3. Linea niger
4. Skenes

ASSIGNMENT SHEET #3

_____AA. The ejaculatory duct opens into the

1. Penis
2. Prostate gland
3. Urethra
4. Urinary bladder

_____BB. What causes the erection of the penis?

1. Increased blood supply
2. The presence of male hormone
3. The presence of semen
4. The stimulation of the testes

_____CC. The small sensitive structure which lies superior to the female urinary meatus is the

1. Clitoris
2. Hymen
3. Labia majora
4. Vulva

_____DD. Which of the following are located one on either side of the vaginal orifice and secrete a lubricating fluid for the vulva canal?

1. Bartholin's glands
2. Bulbourethral glands
3. Cowper's glands
4. Skene's glands

URINARY SYSTEM
UNIT IX

UNIT OBJECTIVE

After completing this unit, the student should be able to describe the structure and function of the urinary system. The student will show this ability by completing the unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match to their correct definitions terms associated with the urinary system.
2. Complete statements concerning the functions of the urinary system.
3. Label the organs of the urinary system.
4. Describe the location and structure of the kidneys.
5. Name functions of the kidneys.
6. Match principal parts of the kidney and nephron to their correct descriptions.
7. Distinguish between structure and functions of the ureter and bladder.
8. Distinguish between the characteristics and functions of the male and female urethra.
9. Complete statements concerning the physical characteristics of urine.
10. Distinguish between normal and abnormal constituents of urine.
11. Complete statements concerning the process of expelling urine.
12. Discuss education and duties of health occupations related to the urinary system.

URINARY SYSTEM
UNIT IX

INFORMATION SHEET

I. Terms and definitions

   A. **Calculus** — Abnormal concentration usually composed of mineral salts; commonly called a *stone*

   B. **Elimination** — Discharge of indigestible materials and waste products of metabolism from the body

   C. **Incontinence** — Involuntary urination

   D. **Micturition** — To urinate or void

   E. **Nephrology** — Science dealing with structure and function of the kidney

   F. **Nephron** — Basic functional unit of the kidney

   G. **Renal** — Pertaining to the kidney

   H. **Retention of urine** — Inability to empty bladder completely

   I. **Suppression of urine** — Inability to void because the kidneys are not secreting any urine and the bladder is empty

   J. **Ureter** — Tube that carries urine from the kidney to the bladder

   K. **Urethra** — Tube for carrying urine from the bladder to the outside of the body

   L. **Urinary meatus** — External opening of the urethra

   M. **Urology** — Branch of medicine concerning the urinary tract in both sexes and the genital tract of the male

II. Functions of the urinary system

   A. Filters the blood by removing various toxins, metabolic waste products, and some water

   B. Manufactures and excretes urine

   C. Assists in regulation of water, electrolyte, and acid-base balance of the body

   D. Influences blood pressure

INFORMATION SHEET

III. The organs of the urinary system (See Figures 1 and 2)

  A. Two kidneys

  B. Two ureters

  C. Urinary bladder

  D. Urethra

FIGURE 1: Female

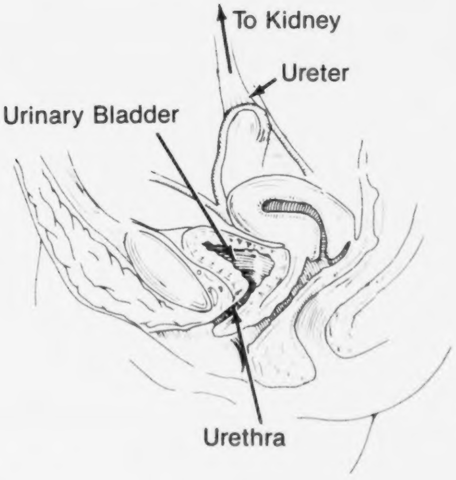
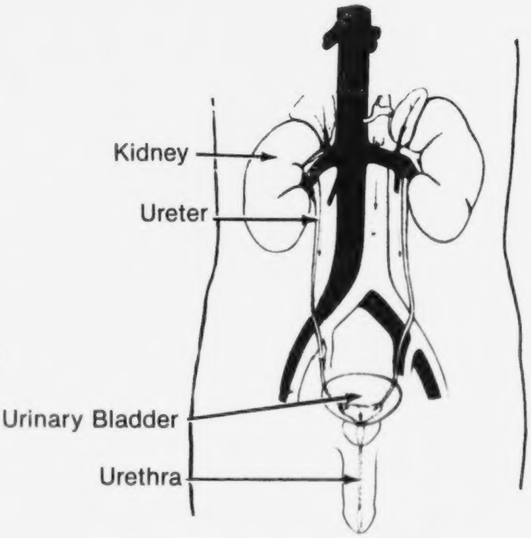

To Kidney
Ureter
Urinary Bladder
Urethra

FIGURE 2: Male


Kidney
Ureter
Urinary Bladder
Urethra

IV. Location and structure of the kidneys

  A. Location

    1. Kidneys lie on both sides of vertebral column near the level of the twelfth vertebrae

    2. Blood vessels and nerves enter the kidney at the hilum

    3. Ureter leaves the kidney at the hilum

  B. Structure

    1. Shape of kidney is like that of a lima bean

    (NOTE: The kidneys measure 2 ½ inches by 4 ½ inches [6-12 cm].)

INFORMATION SHEET

2. Kidneys are embedded in fatty tissue, which is surrounded by a fibrous tissue called *renal fascia*

3. Left kidney is slightly larger than the right kidney

4. Right kidney is a little lower than the left, because of the large space occupied by the liver

V. Functions of the kidneys

A. Secrete (manufacture) urine

(NOTE: The secretion of urine is a constant process. The exact way in which kidneys secrete the urine is not known, but it is thought to depend upon the following factors: the capillary blood pressure in the glomeruli, the velocity of blood flow through the renal vessels, and the physiological activity of the cells lining the renal tubules.)

B. Excrete urine

C. Influence blood pressure

D. Regulate fluid content of blood by separating constituents of urine from the blood

E. Regulate concentration of various salts circulating in the blood

F. Extract from the body any foreign substances such as toxins, whether formed in the body or taken into the body from outside

G. Regulate osmotic pressure of extracellular fluid

H. Regulate electrolyte and acid-base balance

VI. Principal parts of the kidney and nephron

(NOTE: Each kidney contains approximately 1 million nephrons.)

A. **Bowman's capsule** — Funnel-shaped structure partially enclosing the glomerulus that receives waste, water, glucose, and salts from the thin capillaries

B. **Calyx** — Bell-shaped cup in the renal pelvis

C. **Collecting tubule** — Collects the remaining mixture of waste products and water (urine) that has passed through the convoluted tubule

D. **Convoluted tubule** — Long, twisted tube that carries most of the water and salts and all glucose to be reabsorbed by bloodstream

INFORMATION SHEET

E. **Cortex** — Smooth, solid portion of the kidney where the greater part of the nephron is located

F. **Glomerulus** — Cluster of capillaries that filters blood as it comes from the renal arteries

G. **Medulla** — Inner portion of the kidney where the nephron tubes come together in the collecting tubules

(NOTE: The medulla consists of 12 pyramids composed of tiny collecting tubules that give the medulla a striped appearance.)

H. **Renal basin or pelvis** — Area where the upper ureter expands to form a basin that receives urine from the collecting tubules

VII. Structure and functions of the ureter and the bladder

A. Ureter

1. Consists of narrow tubes approximately 1/8 inch (4-5 mm) in diameter and 10-12 inches (25-30 cm) in length; is attached to the kidney at the renal pelvis and empties into the urinary bladder

2. Moves urine from kidneys to bladder by rhythmic contractions of the muscle wall, similar to peristalsis in the digestive system

(NOTE: When disease or congenital abnormalities destroy the ability of the ureteral wall to contract, urine collects in the pelvis of the kidney. This promotes stagnation of urine that may result in infection or renal calculi.)

B. Bladder

(NOTE: The bladder, when empty, lies below the peritoneum and behind the pubic joint; when full, it may extend upward into the abdominal cavity.)

1. Is composed of many layers, including an inner mucous membrane lining, muscle layers, and connective tissue, and is partially covered with the peritoneum

2. Is thick and folded when empty, but begins to stretch out as it fills and the wall becomes thinner

3. Is capable of holding a liter or more of urine in the adult

(NOTE: When the bladder fills from 200-400 cc, special nerve receptors in the wall are stimulated, causing a desire to urinate.)

4. Receives and holds urine

5. Retains urine until contracted sphincter relaxes

INFORMATION SHEET

VIII. Characteristics and functions of the male and female urethra

A. Female urethra

1. Is a short, straight tube
2. Is about 1 1/2 inches (3 cm) long and 1/4 inch (6 mm) in diameter
3. Lies behind the symphysis pubis
4. Is embedded in the anterior wall of the vagina
5. Acts as a passageway for urine from the bladder to the urinary meatus
6. Contains an internal and an external sphincter
7. Contains opening to Skene's glands, which open into the urethra at its termination to secrete lubricating fluid

B. Male urethra

1. Is a modified S-shaped tube
2. Is about 8 to 10 inches (20-25 cm) in length
3. Passes through the center of the prostate gland, then through two sheets of white, fibrous tissue connecting the pubic bones, and then through the penis
4. Is divided into three divisions
    a. Prostatic — Passes vertically through the prostate gland
    b. Membranous — Extends between the apex of the prostate and the bulb of urethra, passes through the pelvic wall, and is surrounded by the external sphincter muscle
    c. Cavernous or anterior — Extends through the penis from the membranous to the urinary meatus
5. Acts as a passageway for urine and seminal fluid

IX. Physical characteristics of urine

A. Urine is a watery solution of the waste products of metabolism

B. Clear liquid may be amber or straw colored

(NOTE: The color is from excreted bile pigments.)

INFORMATION SHEET

C. Slightly acidic pH ranges from 5.5 to 6.5

(NOTE: The average pH is 6.0.)

D. Normal specific gravity is 1.015 to 1.025, which is a little heavier than water

E. Characteristic odor of urine left standing for a short period of time is like that of ammonia

F. Average quantity excreted in 24 hours is 1000 cc to 1800 cc

G. Quantity excreted is dependent upon amount of fluid intake and amount of water lost by evaporation through respiratory and cutaneous surfaces

(NOTE: In any twenty-four hour period, volume of urine output should be close to that of liquid intake.)

X. Constituents of urine

A. Normal constituents

1. Water

(NOTE: Urine is 95 percent water.)

2. Organic substances (protein waste products)

   a. Uric acid

   b. Urea

   c. Creatinine

   d. Ammonia

   e. Hormones

3. Inorganic substances (mineral salts)

   a. Sodium chloride

   b. Sulfates and phosphates

   c. Potassium

   d. Magnesium

   e. Calcium

B. Abnormal constituents

1. Glucose (glycosuria)

(NOTE: This is one symptom of diabetes mellitus.)

INFORMATION SHEET

2. Albumin (albuminuria)

3. Blood (hematuria)

4. Pus cells (pyuria)

5. Acetone (acetonuria)

XI. Process of expelling urine

A. For the average individual when there is 200 to 250 cc of urine in the bladder, the pressure on the bladder walls creates an impulse (message to central nervous system) to urinate

B. In the adult, the act of voiding, although dependent on involuntary reflexes, is partly under voluntary control

C. Urination is accomplished by contraction of the bladder walls, and the relaxation of the sphincter muscles at the junction of the urinary bladder and the urethra

XII. Health occupations related to the urinary system (Table 1)

TABLE 1

Occupation	Education	Duties
Nephrologist	Completion of medical school plus one year of internship, two years of residency, and two years of training in nephrology	Medical management of diseases of the kidney, hypertension and electrolyte imbalance
Organ procurement coordinator	Additional training after nurse or physician's assistant training	Coordinates the harvesting, preservation, and transportation of donated kidneys, and the maintenance of a system to locate prospective organ recipients
Renal transplant coordinator	Physician's assistant or nurse with a background knowledge of dialysis, renal disease, and transplantation	Coordinates the transplantation component of the endstage renal disease program for living, related, and cadaveric donors and their recipients

INFORMATION SHEET

TABLE 1 (Continued)

Occupation	Education	Duties
Tissue-typing technician	Background in medical technology, blood banking, immunology or histology	Performs laboratory tests to determine compatibility between a potential donor and a potential recipient
Urologist	Five years of training after medical school	Medical and surgical treatment of disorders of the kidney, ureters, bladder, prostate, urethra, and male genital structure

URINARY SYSTEM
UNIT IX

ASSIGNMENT SHEET #1 — COMPLETE STATEMENTS CONCERNING THE URINARY SYSTEM

NAME ______________________________ SCORE ____________

This assignment sheet is designed to help you study for the unit test and to assess your knowledge of the urinary system. Read each question carefully, and then select the answer that best completes the statement or answers the question. Write the correct numbers in the blanks. You may consult additional references to find answers to the questions.

_____A. Urine drains from the kidneys to the bladder through the

1. Renal pelvis
2. Renal tubules
3. Ureters
4. Urethra

_____B. The female urethra is located

1. Anterior to the vagina
2. Between the bafina and the trigone
3. Between the kidney and bladder
4. Posterior to the vagina

_____C. The normal pH of urine is about

1. 3.0
2. 6.0
3. 8.0
4. 9.0

_____D. The functioning unit of the urinary system is the

1. Afferent and efferent arteriole
2. Cortex
3. Glomerulus
4. Nephron

_____E. Diffusion, filtration, and osmosis occur during the production of urine in the

1. Adipose capsule
2. Kidney
3. Ureter
4. Urinary bladder

ASSIGNMENT SHEET #1

______F. The production and elimination of urine includes the organs of the urinary system in the order of

1. Cortex, urethra, bladder, ureter
2. Kidney, urethra, bladder, ureter
3. Kidney, pelvis, ureter, bladder
4. Kidney, ureter, bladder, urethra

______G. Urine not only passes down through the ureters by gravity, but also is forced down by

1. Crenation
2. Mitosis
3. Osmosis
4. Peristalsis

______H. The kidney is located in an area known as the

1. Mediaperitoneal space
2. Retrocecal space
3. Retroperitoneal space
4. Trigone space

______I. What percentage of urine is water?

1. 60%
2. 75%
3. 95%
4. 100%

______J. Urine is normally

1. Alkaline in reaction
2. Clear, light, straw-colored
3. pH 9
4. Strongly aromatic

______K. Blood vessels and nerves enter the kidney at the

1. Calyx
2. Cortex
3. Hilum
4. Loop of Henle

______L. A normal waste product in urine is

1. Albumin
2. Blood
3. Glucose
4. Urea

ASSIGNMENT SHEET #1

_____M. Three principal parts of the kidney are

1. Glomerulus, Bowman's capsule, ureter
2. Medulla, cortex, renal pelvis
3. Medulla, nephron, ureter
4. Prostate gland, urethra, blood vessels

_____N. Which is **NOT** a term meaning specifically "to expel urine"?

1. Elimination
2. Micturition
3. Urination
4. Voiding

_____O. The male urethra may be divided into three parts—the membranous, the cavernous, and the

1. Prostatic
2. Seminal
3. Testicular
4. Triangula

_____P. The average individual receives the impulse to urinate when there is how much urine in the bladder?

1. 200 cc
2. 500 cc
3. 750 cc
4. 1000 cc

_____Q. The cup-like cavities in the pelvis of the kidney are

1. Calculi
2. Calyces
3. Capsules
4. Pyramids

_____R. The presence of an abnormal amount of glucose in the urine is

1. Diuresis
2. Glycosuria or glucosuria
3. Hydronephrosis
4. Hyperglycemia

ASSIGNMENT SHEET #1

_____S. Blood in the urine is known as

1. Dysuria
2. Hematuria
3. Pyelitis
4. Pyuria

_____T. Failure of the kidneys to secrete urine is called

1. Dysuria
2. Oliguria
3. Retention of urine
4. Suppression of urine or anuria

_____U. The section of the male urethra which passes through the pelvic wall is known as the

1. Cavernous
2. Membranous
3. Prostatic
4. Seminal

_____V. There are approximately _______________ nephrons in each kidney

1. 50 thousand
2. 1 million
3. 10 million
4. 50 million

_____W. The _______________ glands secrete lubricating fluid into the female urethra.

1. Bartholin
2. Pituitary
3. Renal
4. Skene

_____X. _______________ is another name for stones.

1. Calculi
2. Calyces
3. Calyx
4. Cortex

_____Y. All the following are functions of the kidneys **EXCEPT**

1. Regulate concentration of salts in blood
2. Regulate electrolyte balance
3. Regulate number of white blood cells
4. Regulate osmotic pressure of extracellular fluid

ENDOCRINE SYSTEM
UNIT X

UNIT OBJECTIVE

After completing this unit, the student should be able to identify the principal endocrine glands and describe the function of the endocrine glands. The student will show this ability by completing the unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match to their correct definitions terms associated with the endocrine system.
2. State the function of the endocrine system.
3. Identify the principal endocrine glands.
4. Select true statements concerning the pituitary gland.
5. Match hormones of the pituitary gland with their correct function.
6. Complete statements concerning the thyroid gland.
7. Complete statements concerning the parathyroid glands.
8. Select true statements concerning the adrenal glands.
9. Match the principal hormones of the adrenal glands with their correct functions.
10. Complete statements concerning the gonads.
11. Select true statements concerning the islands of Langerhans.
12. Select true statements concerning other structures with endocrine functions.
13. Describe the education and duties of a health occupation related to the endocrine system.

ENDOCRINE SYSTEM
UNIT X

INFORMATION SHEET

I. Terms and definitions

   A. **Corpus luteum** — Yellow, glandular mass, formed by an ovarian follicle after ovulation, that continues to produce hormones

   B. **Endocrine gland** — Ductless gland that produces an internal secretion discharged into the blood or lymph and circulated to all parts of the body

   EXAMPLE: Thyroid gland

   C. **Endocrinology** — Study of the endocrine system

   D. **Exocrine gland** — Gland whose secretion reaches an epithelial surface either directly or through a duct

   EXAMPLE: Sweat glands

   E. **Hormone** — Internal secretion of a gland or an organ that regulates a body function

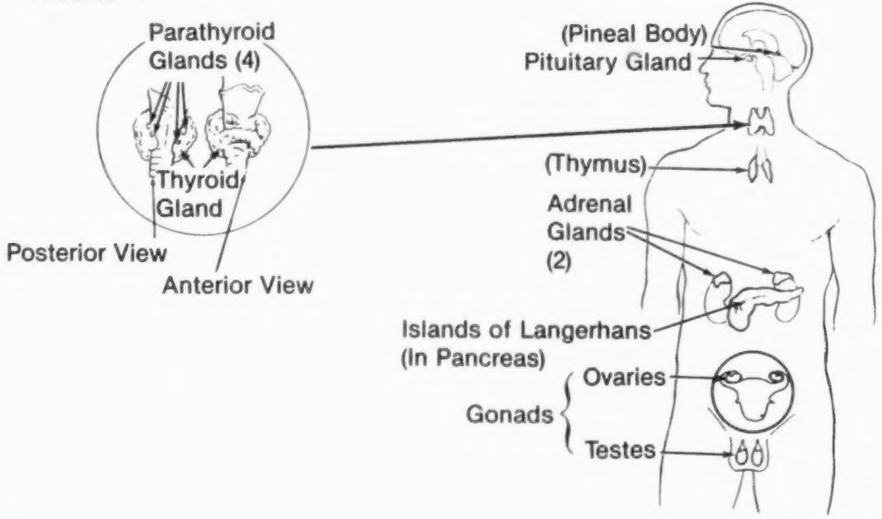
   F. **Hypersecretion** — Excessive secretion

   G. **Hyposecretion** — Inadequate secretion

II. Function of the endocrine system — To secrete substances called hormones

III. Principal endocrine glands and their locations (Figure 1)

FIGURE 1


Parathyroid Glands (4)
Thyroid Gland
Posterior View
Anterior View
(Pineal Body)
Pituitary Gland
(Thymus)
Adrenal Glands (2)
Islands of Langerhans (In Pancreas)
Ovaries
Gonads
Testes

INFORMATION SHEET

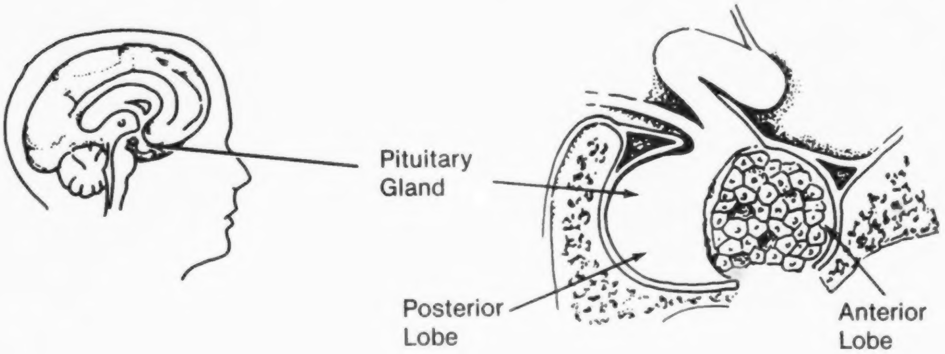
IV. Pituitary gland structure and function

A. Structure (See Figure 2)

1. Small, gray, rounded body of pituitary gland is attached to the base of the brain by a stalk and is located behind the eyes

2. Gland is divided into anterior and posterior lobes that have separate functions

FIGURE 2



B. Function

(NOTE: See also Section V for further explanation.)

1. Anterior lobe secretes several hormones

2. Posterior lobe stores two hormones produced by the hypothalamus

   (NOTE: Neurons in the hypothalamus produce vasopressin and oxytocin, which are stored in the posterior lobe of the pituitary gland until they are secreted into the blood.)

3. Pituitary hormones affect functioning of several other endocrine glands

   (NOTE: The pituitary is known as the "master" gland because it influences other glands.)

   a. Thyroid

   b. Adrenal

   c. Ovary

   d. Testes

INFORMATION SHEET

V. Hormones of the pituitary gland and their functions

  A. Anterior lobe

    1. **Somatotropic hormone** — Regulates growth; also referred to as the *human growth hormone*

    2. **Adrenocorticotropic hormone** — Regulates functional activity of the adrenal cortex

    3. **Thyrotropic hormone** — Regulates functional activity of the thyroid gland

    4. Gonadotropic hormones

      a. **Follicle-stimulating hormone (FSH)** — Stimulates development of ovarian follicles and formation of sperm in the testes

      b. **Luteinizing hormone (LH)** — Induces secretion of estrogens, induces ovulation and development of the corpus luteum

      c. **Luteotropic hormone (LTH)** — Maintains mature corpora lutea, induces secretion of progesterone, and induces secretion of milk in a fully developed mammary gland

  B. Posterior lobe

    1. **Vasopressin** — Induces contraction of smooth muscles of blood vessels, thus affecting blood pressure; is associated with an antidiuretic principle that prevents excessive loss of water through the kidneys; causes reabsorption of water in nephron tubules; also called the *antidiuretic hormone* (ADH)

    2. **Oxytocin** — Stimulates the uterus to contract and acts on the mammary gland to stimulate the release of milk

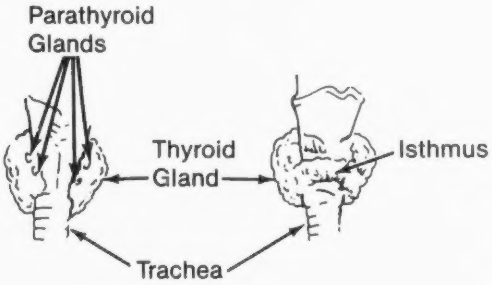
VI. Thyroid gland structure and function

  A. Structure (See Figure 3)

    1. Thyroid is the largest endocrine gland

    2. Gland consists of two lobes on opposite sides of the trachea and connected in the middle by the isthmus

FIGURE 3



INFORMATION SHEET

B. Function

1. Thyroid hormones are required for normal development of the central nervous system

2. Thyroid gland secretes the hormone *thyroxine*

3. Iodine must be present in sufficient amounts in order for thyroxine to be synthesized

4. Thyroxine is transported in the blood by binding itself to proteins

5. Thyroxine aids in regulating metabolism, especially carbohydrate and fat metabolism

VII. Parathyroid glands structure and function

A. Structure — Parathyroid glands consist of four small, bean-shaped bodies that lie on the posterior surface of the thyroid lobes (See Figure 3)

B. Function

1. Parathyroid glands secrete **parathormone**

2. Parathormone helps maintain homeostasis of blood calcium concentration by promoting calcium absorption into the blood

VIII. Adrenal glands structure and function

A. Structure

1. Adrenal glands are located superior to the kidneys

   (NOTE: Adrenal glands are also called *suprarenals* because of their location.)

2. Adrenal glands consist of two parts that function independently

   a. Cortex — Outer portion

   b. Medulla — Inner portion

B. Function

(NOTE: Complete removal of both adrenals would result in death unless substitute hormones are administered to the individual.)

1. Adrenal cortex helps the body adapt to constant changes in the environment

   (NOTE: The adrenal cortex is essential to life.)

2. Adrenal medulla and the sympathetic nervous system help individuals meet certain types of emergency situations

INFORMATION SHEET

IX. Principal hormones of the adrenal glands and their functions

A. Hormones of the adrenal cortex

1. **Aldosterone** — Regulates metabolism of sodium, chloride, and potassium: therefore, regulates water and electrolyte balance of the body

2. **Cortisol** and **corticosterone** — Regulate carbohydrate as well as fat and protein metabolism, which affects essentially every cell in the body

3. **Androgens** — Regulate development and maintenance of male secondary sex characteristics

4. **Estrogens** — Are responsible for female secondary sex characteristics, and the cyclic changes in the vagina and uterus

5. **Progesterone** — Is responsible for changes in the uterine lining in second half of menstrual cycle, for development of maternal placenta, and for development of mammary glands

B. Hormones of the adrenal medulla

(NOTE: These are known as "fight or flight" hormones because of their effect during emergency situations.)

1. **Epinephrine (adrenalin)** — Dilates arteries, increases heart activity, dilates bronchi, increases level of glucose in blood by stimulating liver, increases amount of fatty acid in blood, and diminishes activity of gastrointestinal system

2. **Norepinephrine** — Constricts arterioles and venules, resulting in increased resistance to blood flow, elevated blood pressure, and slowing of the heart

X. Gonads

A. Ovaries (female gonads) secrete several hormones including estrogens and progesterone

1. **Estrogens** such as hormones **estradiol** and **estrone** — Responsible for female secondary sexual characteristics and the cyclic changes in the vagina and uterus

2. **Progesterone** — Responsible for changes in the uterine lining in second half of menstrual cycle, for development of maternal placenta, and for development of mammary glands

B. Testes (male gonads) secrete **androgens** including **testosterone** and **andosterone,** which regulate the development and maintenance of male secondary sex characteristics

INFORMATION SHEET

XI. Islands of Langerhans

  A. Structure — Special cells are scattered throughout the pancreas

  B. Function

    1. Islands of Langerhans manufacture two hormones: **insulin** and **glucagon**

    2. Insulin

      a. Insulin regulates normal use of sugar in the body

      b. Insulin increases the rate of glucose metabolism

    3. Glucagon

      a. Glucagon accelerates the conversion of glycogen to glucose in the liver

      (NOTE: Glucagon serves as an antagonist to insulin.)

      b. Glucagon tends to increase the blood glucose concentration.

XII. Other structures with endocrine functions

  A. Pineal body

    1. Structure — Pineal body is a small organ that lies near the middle of the brain

    2. Function

      a. Pineal body influences sexual, skeletal, and mental development during the first seven years of life, then becomes inactive

      b. Pineal body synthesizes the hormone **melatonin**, which exerts an inhibitory effect on gonads

  B. Thymus gland

    1. Structure

      a. Thymus gland is a two-lobed organ located in upper part of chest cavity along the trachea

      b. Thymus decreases in size after puberty

    2. Function

      a. Thymus produces hormones that stimulate the production of small lymphocytes that function in the body's defense against infection

      b. Thymus secretes a hormone called *thymosin*, which promotes the growth of peripheral lymphoid tissue

      c. Thymus is most active during prenatal life and in infancy

INFORMATION SHEET

C. Placenta

   1. Placenta becomes a temporary endocrine gland during pregnancy

   2. Placenta secretes **chorionic gonadotropin, estrogen,** and **progesterone**, whose increased levels delay menstruation

D. Stomach wall — Stomach wall secretes the hormone **gastrin**, which stimulates the secretion of gastric glands

E. Small intestine — Small intestine secretes the hormone **secretin**, which stimulates the secretion of pancreatic juices and bile

XIII. Health occupation related to the endocrine system (Table 1)

TABLE 1

Occupation	Education	Duties
Endocrinologist	Specialization after completion of medical school	Diagnoses and treats disorders of the endocrine system

ENDOCRINE SYSTEM
UNIT X

ASSIGNMENT SHEET #1 — LABEL ENDOCRINE GLANDS

NAME ______________________________ SCORE ______________

The endocrine glands produce internal secretions called *hormones*. The hormones regulate and control body activities and growth. The hormones enter the bloodstream directly and are quickly carried to all parts of the body.

In this assignment sheet, you are given an illustration of the endocrine glands. Review the information sheet, and then label the following diagram from memory.

A. ______________________________

B. ______________________________

C. ______________________________

D. ______________________________

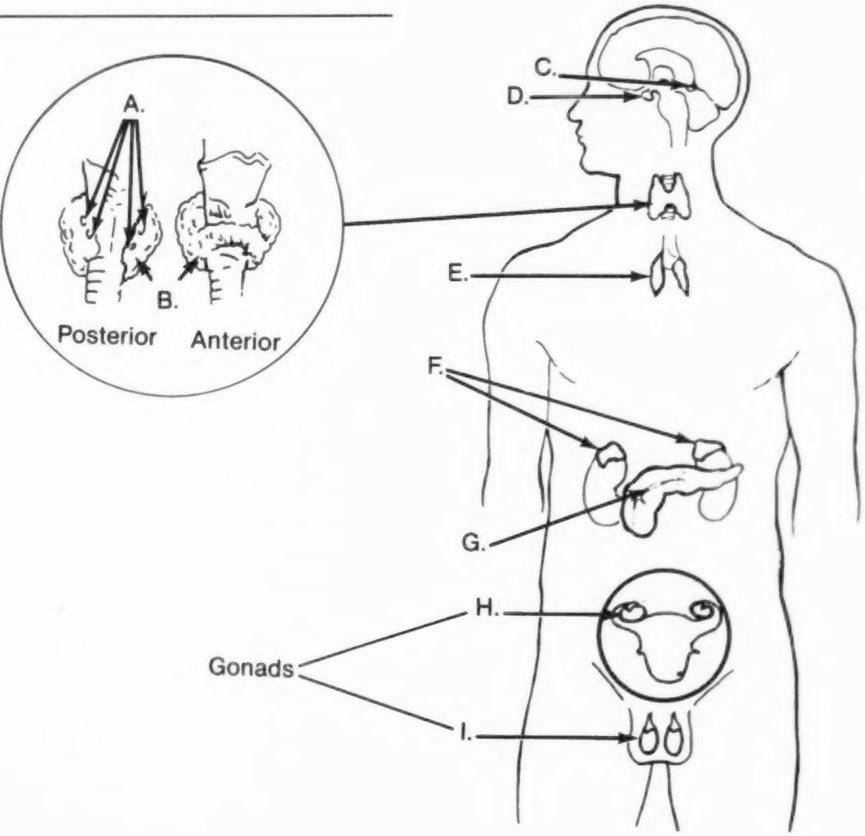
E. ______________________________

F. ______________________________

G. ______________________________

H. ______________________________

I. ______________________________



ENDOCRINE SYSTEM
UNIT X

ASSIGNMENT SHEET #2 — COMPLETE STATEMENTS CONCERNING THE ENDOCRINE SYSTEM

NAME ____________________ SCORE ____________

This assignment sheet is designed to help you study for the unit test and to assess your knowledge of the endocrine system. Each question is multiple-choice with four possible answers. Read each question carefully, and then select the answer that best completes the statement or answers the question. Write the correct numbers in the blanks. You may use additional references to find answers to the questions.

_____A. The mineral necessary for the production of thyroxine is

1. Calcium
2. Iodine
3. Iron
4. Phosphorus

_____B. The master gland of the endocrine system, located in the cerebrum, is the

1. Parathyroid
2. Pineal
3. Pituitary
4. Thymus

_____C. Vasopressin is stored in the __________ lobe of the pituitary gland

1. Anterior
2. Lateral
3. Posterior
4. Sagittal

_____D. The endocrine gland located in the neck is called the

1. Adrenal
2. Pituitary
3. Thymus
4. Thyroid

_____E. The hormone released by the medulla of the adrenal gland at times of emergency is called

1. Epinephrine or adrenalin
2. Insulin
3. Medullin or adrenalin
4. Pressor principle

ASSIGNMENT SHEET #2

_____F. The two hormones secreted by the ovaries are important in the

1. Development of secondary sex characteristics and normal menstruation
2. Maintenance of water balance in the body
3. Regulation of metabolic rate
4. Transmission of sex-linked genetic traits

_____G. A hormone secreted by the male sex gland is

1. Estrogen
2. Insulin
3. Progesterone
4. Testosterone

_____H. The endocrine glands secrete hormones into

1. The bloodstream
2. Body cavities
3. Ducts
4. The respiratory tract

_____I. The hormone secreted by the posterior pituitary gland that stimulates contractions of the muscles of the uterus is

1. ADH
2. Aldosterone
3. Melanocyte
4. Oxytocin

_____J. The largest gland in the endocrine system is

1. Adrenal gland
2. Pituitary gland
3. Thymus
4. Thyroid gland

_____K. In the female, the endocrine glands known as gonads are

1. The fallopian tubes
2. The ovaries
3. The pituitaries
4. The uterus

ASSIGNMENT SHEET #2

______L. A ductless gland that decreases in size at puberty is called the

1. Adrenal gland
2. Pituitary gland
3. Thyroid gland
4. Thymus gland

______M. The pituitary gland is considered the most important endocrine gland because

1. It produces so many different secretions
2. Its secretions circulate freely in the bloodstream
3. Its secretions control the nervous system
4. Its secretions stimulate other endocrine glands to produce

______N. The effects of epinephrine include

1. Conversion of glycogen to sugar
2. Decreased heartbeat
3. Dilation of bronchi and bronchioles
4. Relaxation of blood vessels

______O. This temporary organ or gland produces hormones during pregnancy that cause changes in the uterine lining and help to prepare the breasts for lactation. This gland-like organ is the

1. Corpus luteum
2. Melatonin
3. Pineal body
4. Placenta

______P. Vasopressin and oxytocin are stored in the

1. Anterior pituitary
2. Parathyroids
3. Placenta
4. Posterior pituitary

______Q. The hormones that function to develop and maintain the female reproductive organs are

1. Adrenalin
2. Corticoids
3. Estrogens and progesterones
4. Testosterones

______R. The testes produce male hormones known as

1. Estrogen
2. Progesterone
3. Semen
4. Testosterone and andosterone

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